# Maintenance and Service Guide

## Compaq Presario X6000 Notebook PC
## HP Compaq nx9600 Notebook PC

Document Part Number: 379178-002

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This guide is a troubleshooting reference used for maintaining and servicing the notebook. It provides comprehensive information on identifying notebook features, components, and spare parts; troubleshooting notebook problems; and performing notebook disassembly procedures.

Maintenance and Service Guide
Compaq Presario X6000 Notebook PC
HP Compaq nx9600 Notebook PC
Second Edition September 2006
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# 1

# Product Description

The Compaq Presario X6000 Notebook PC ❶ and HP Compaq nx9600 Notebook PC ❷ offer advanced modularity, Intel® Mobile Pentium® 4 processors, and extensive multimedia support.


*Compaq Presario X6000 Notebook PC and HP Compaq nx9600 Notebook PC*

# 1.1 Features

- The following processors are available, varying by notebook model:
  - ❏ Intel Pentium 4 560 (3.6-GHz) with 800-MHz FSB with HT Technology
  - ❏ Intel Pentium 4 550 (3.4-GHz) with 800-MHz FSB with HT Technology
  - ❏ Intel Pentium 4 540 (3.2-GHz) with 800-MHz FSB with HT Technology
  - ❏ Intel Pentium 4 530 (3.0-GHz) with 800-MHz FSB with HT Technology (Compaq Presario X6000 models only)
  - ❏ Intel Pentium 4 520 (2.8-GHz) with 800-MHz FSB with HT Technology (Compaq Presario X6000 models only)
- The following displays are available, varying by notebook model:
  - ❏ 17.0-inch WSXGA+WVA (1680 × 1050) with Brightview TFT display with over 16.7 million colors
  - ❏ 17.0-inch WXGA+WVA (1440 × 900) with Brightview TFT display with over 16.7 million colors
  - ❏ 17.0-inch WXGA+WVA (1440 × 900) TFT display with over 16.7 million colors
- 100-, 80-, 60-, or 40-GB high-capacity hard drive, varying by notebook model
- 256-MB DDR-2 synchronous DRAM (SDRAM) at 400 MHz, expandable to 2.0 GB
- Microsoft® Windows® XP Home Edition or Windows XP Professional, varying by notebook model
- Full-size Windows keyboard with full-size numeric keypad
- TouchPad pointing device, including a dedicated vertical scroll region and a button that enables/disables TouchPad operation
- Integrated 10 Base-T/100 Base-TX Ethernet local area network (LAN) network interface card (NIC) with RJ-45 jack (Compaq Presario X6000 models only)

- Integrated Gigabit Ethernet (10/100/1000) LAN NIC with RJ-45 jack (HP Compaq nx9600 models only)
- Integrated high-speed 56K modem with RJ-11 jack
- Integrated wireless support for Mini PCI IEEE 802.11a/b (Compaq Presario X6000 models) and 802.11a/b/g (HP Compaq nx9600 models) WLAN devices
- Support for one Type II PC Card slot, with support for both 32-bit (CardBus) and 16-bit PC Cards
- External 180- and 135-watt AC adapter with 3-wire power cord, varying by notebook model
- 12-cell Li-Ion battery pack
- Stereo speakers with volume up, volume mute, and volume down buttons
- Support for the following optical drives:
  - 8X Max DVD±RW/R and CD-RW Combo Drive
  - 24X Max DVD/CD-RW Combo Drive
- Connectors:
  - External monitor
  - Universal Serial Bus (USB) v. 2.0 (four ports)
  - RJ-11 (modem)
  - RJ-45 (network)
  - Audio-out (headphone)
  - Audio-in (microphone)
  - Power
  - IEEE 1394 (select models only)
  - S-Video-out (select models only)
  - Expansion port 2
  - Memory Reader slot (Compaq Presario X6000 models only)
  - Digital Media Slot (HP Compaq nx9600 models only)
  - Digital drive bay
  - ExpressCard

## 1.2 Resetting the Notebook

If the notebook you are servicing has an unknown password, follow these steps to clear the password. These steps also clear CMOS:

1. Prepare the notebook for disassembly (refer to Section 5.3, "Preparing the Notebook for Disassembly," for more information).
2. Remove the real time clock (RTC) battery (refer to Section 5.16, "System Board," for more information on removing and replacing the RTC battery).
3. Wait approximately 5 minutes.
4. Replace the RTC battery and reassemble the notebook.
5. Connect AC power to the notebook. Do not reinsert any battery packs at this time.
6. Turn on the notebook.

All passwords and all CMOS settings have been cleared.

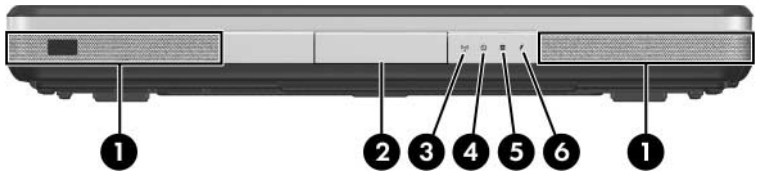
## 1.3 Power Management

The notebook comes with power management features that extend battery operating time and conserve power. The notebook supports the following power management features:

- Standby
- Hibernation
- Setting customization by the user
- Hotkeys for setting the level of performance
- Battery calibration
- Lid switch standby/resume
- Power/standby button
- Advanced Configuration and Power Management (ACPM) compliance

# 1.4 External Components

The external components on the front of the notebook are shown below and described in Table 1-1.



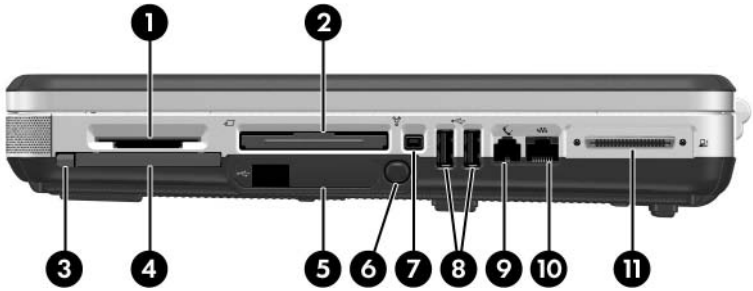

*Front Components*

**Table 1-1**

**Front Components**

| Item | Component | Function |
|---|---|---|
| 1 | Stereo speakers (2) | Produce stereo sound. |
| 2 | Display release latch | Opens the notebook. |
| 3 | Wireless light | On: An integrated wireless device has been enabled. |
| 4 | Power/standby light | ■ On: Notebook is turned on.<br>■ Blinking: Notebook is in standby.<br>■ Off: Notebook is off. |
| 5 | Drive activity light | On: A drive on the notebook is being accessed. |
| 6 | Battery light | ■ On: Battery pack is charging.<br>■ Blinking: Battery pack has reached a low-battery condition. |

The external components on the right side notebook are shown below and described in Table 1-2.




*Right-Side Components*

**Table 1-2**

**Right-Side Components**

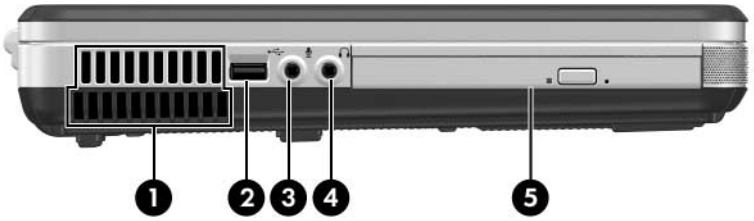
| Item | Component | Function |
|---|---|---|
| 1 | Memory Reader (Compaq Presario X6000 only)<br>Digital Media Slot (HP Compaq nx9600 only) | Supports the following optional digital media cards: Secure Digital (SD) Memory Card, Secure Digital Input/Output (SD I/O) Card, Memory Stick, Memory Stick Pro, MultiMediaCard, xD-Picture Card, and SmartMedia Card. |
| 2 | ExpressCard slot | Supports an optional ExpressCard. |

**Table 1-2**

**Right-Side Components *(Continued)***

| Item | Component | Function |
|---|---|---|
| 3 | PC Card eject button | Ejects an optional PC Card from the PC Card slot. |
| 4 | PC Card slot | Supports an optional Type I or Type II 32-bit (CardBus) or 16-bit PC Card.<br>Also serves as a storage location for the optional remote control. |
| 5 | Digital drive bay | Supports an optional USB digital drive. |
| 6 | Digital drive eject button | Ejects an optional USB digital drive from the digital drive bay. |
| 7 | 1394 port | Connects an optional 1394 device such as a scanner, digital camera, or digital camcorder. |
| 8 | USB ports (2) | Connect an optional 1.1- or 2.0-compliant USB device. |
| 9 | RJ-11 (modem) jack | Connects the modem cable. |
| 10 | RJ-45 (network) jack | Connects an optional network cable. |
| 11 | Expansion port 2 | Connects to an optional notebook expansion product. |

The external components on the left side of the notebook are shown below and described in Table 1-3.



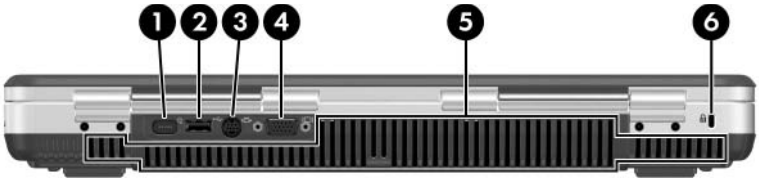

*Left-Side Components*

**Table 1-3**

**Left-Side Components**

| Item | Component | Function |
|---|---|---|
| 1 | Exhaust vent | Provides airflow to cool internal components.<br>⚠ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow. |
| 2 | USB port | Connects an optional 1.1- or 2.0-compliant USB device. |
| 3 | Audio-in (microphone) jack | Connects an optional monaural microphone. |
| 4 | Audio-out (headphone) jack (2) | Connect optional headphones or powered stereo speakers. Also connects the audio function of an audio/video device such as a television or VCR. |
| 5 | Optical drive | Supports an optical disc. The type of optical drive, such as a combination CD-ROM/DVD-ROM, varies by model. |

The external components on the rear panel of the notebook are shown below and described in Table 1-4.



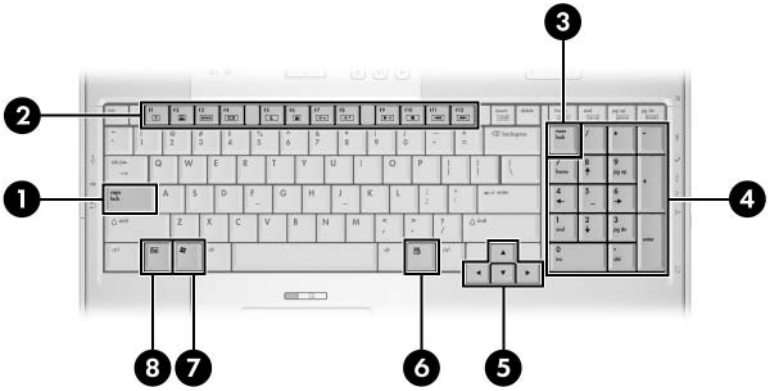

*Rear Panel Components*

**Table 1-4**

**Rear Panel Components**

| Item | Component | Function |
|---|---|---|
| 1 | Power connector | Connects an AC adapter. |
| 2 | USB port | Connects an optional 1.1- or 2.0-compliant USB device. |
| 3 | S-Video-out jack | Connects an optional S-Video device, such as a television, VCR, camcorder, projector, or video capture card. |
| 4 | External monitor port | Connects an optional VGA external monitor or projector. |
| 5 | Exhaust vent | Provides airflow to cool internal components.<br>△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow. |
| 6 | Security cable slot | Attaches an optional security cable to the notebook. |

The standard keyboard components of the notebook are shown below and described in Table 1-5.



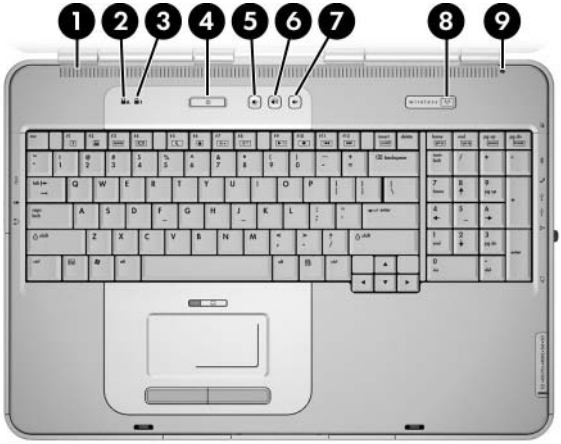

*Standard Keyboard Components*

**Table 1-5**

**Standard Keyboard Components**

| Item | Component | Function |
|---|---|---|
| 1 | **caps lock** key | Enables caps lock and turns on the caps lock light. |
| 2 | **f1** to **f12** keys (12) | Perform system and application tasks. When combined with the **fn** key, several keys and buttons perform additional tasks as hotkeys. |
| 3 | **num lock** key | Enables numeric lock, turns on the embedded numeric keypad, and turns on the num lock light. |
| 4 | Keypad keys (15) | In Windows, can be used like the keys on an external numeric keypad. |
| 5 | Arrow keys | Moves the cursor around the screen. |
| 6 | Windows applications key | In Windows, displays a shortcut menu for items beneath the pointer. |
| 7 | Windows logo key | In Windows, displays the Windows Start menu. |
| 8 | **fn** key | Combines with other keys to perform system tasks. For example, pressing **fn+f7** decreases screen brightness. |

The upper components of the keyboard are shown below and described in Tables 1-6 and 1-7.




*Upper Keyboard Components*

**Table 1-6**

**Upper Keyboard Components**

| Item | Component | Function |
|---|---|---|
| 1 | Exhaust vents | Provide airflow to cool internal components.<br>△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow. |
| 2 | Caps lock light | On: **caps lock** is on. |

**Table 1-6**

**Upper Keyboard Components *(Continued)***

| Item | Component | Function |
|---|---|---|
| 3 | Num lock light | On: **num lock** or the numeric keypad is on. |
| 4 | Power/standby button | When the notebook is:<br>■ Off, press to turn on the notebook.<br>■ On, briefly press to initiate standby.<br>■ In standby, briefly press to resume from standby.<br>■ In hibernation, briefly press to restore from hibernation.<br>✎ If the system has stopped responding and Microsoft® Windows® shutdown procedures cannot be used, press and hold the power/standby button for at least 4 seconds to turn off the notebook. |
| 5 | Volume down button | Decreases system volume. |
| 6 | Volume mute button | Mutes or restores system volume. |
| 7 | Volume up button | Increases system volume. |
| 8 | Wireless button | Turns the wireless network device on and off (select models only). |
| 9 | Display lid switch | ■ If the notebook is closed while on, turns off the display.<br>■ If the notebook is opened while in standby, turns on the notebook (resumes from standby). |

The notebook top components are show below and described in Table 1-7.

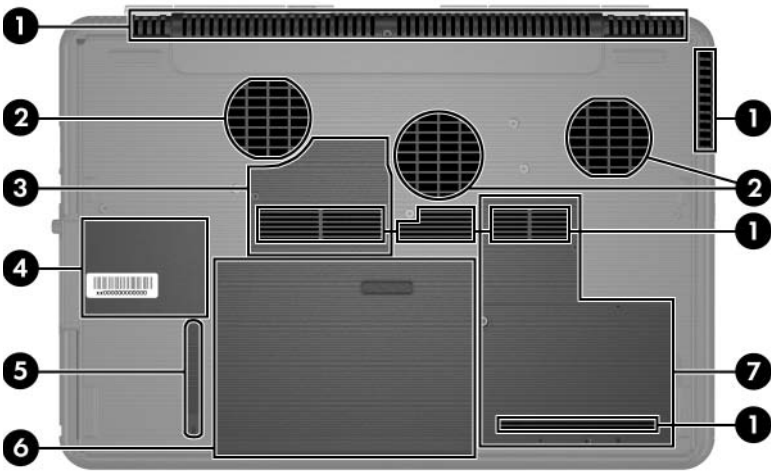

*Notebook Top Components*

**Table 1-7**

**Notebook Top Components**

| Item | Component | Function |
|---|---|---|
| 1 | TouchPad light | On: TouchPad is enabled. |
| 2 | TouchPad | Moves the pointer and selects or activates items on the screen. |
| 3 | TouchPad left/right scroll zone | Scrolls left or right. |
| 4 | Left and right TouchPad buttons (2) | Function like the left and right buttons on an external mouse. |
| 5 | Memory Reader light | On: an SD Memory Card, SD I/O Card, Memory Stick, Memory Stick Pro, MultiMediaCard, xD-Picture Card, and SmartMedia inserted in the Memory Reader is being accessed. |
| 6 | TouchPad up/down scroll zone | Scrolls up or down. |
| 7 | TouchPad button | Enables/disables the TouchPad. |

The external components on the bottom of the notebook are shown below and described in Table 1-8.




*Bottom Components*

**Table 1-8**

**Bottom Components**

| Item | Component | Function |
|---|---|---|
| 1 | Exhaust vents (4) | Provide airflow to cool internal components.<br><br>△ To prevent overheating, do not obstruct vents. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow. |

**Table 1-8**

**Bottom Components *(Continued)***

| Item | Component | Function |
|---|---|---|
| 2 | Fans (2) | Provide airflow to cool internal components.<br><br>△ To prevent overheating, do not obstruct fans. Do not allow a hard surface, such as a printer, or a soft surface, such as pillows, thick rugs or clothing, to block airflow. |
| 3 | Memory module compartment | Contains two memory slots that support replaceable memory modules. The number of preinstalled memory modules varies by notebook model. |
| 4 | Label areas (2) | Contains the notebook serial number and other applicable regulatory labels. |
| 5 | Battery pack release latch | Releases a battery pack from the battery bay. |
| 6 | Battery bay | Holds a battery pack. |
| 7 | Hard drive bay | Holds the internal hard drive. |
| | Mini PCI compartment | Holds an optional wireless LAN device.<br><br>△ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care. |

# 1.5 Design Overview

This section presents a design overview of key parts and features of the notebook. Refer to Chapter 3, "Illustrated Parts Catalog," to identify replacement parts, and Chapter 5, "Removal and Replacement Procedures," for disassembly steps.

The system board provides the following device connections:

- Memory module
- Mini PCI communications devices
- Hard drive
- Display
- Keyboard and TouchPad
- Audio
- Intel Pentium 4 processors
- PC Card

**CAUTION:** To properly ventilate the notebook, allow at least a 7.6-cm (3-inch) clearance on the left and right sides of the notebook.

The notebook uses an electric fan for ventilation. The fan is controlled by a temperature sensor and is designed to be turned on automatically when high temperature conditions exist. These conditions are affected by high external temperatures, system power consumption, power management/battery conservation configurations, battery fast charging, and software applications. Exhaust air is displaced through the ventilation grill located on the left side of the notebook.

# 2

# Troubleshooting

**WARNING:** Only authorized technicians trained by HP should repair this equipment. All troubleshooting and repair procedures are detailed to allow only subassembly-/module-level repair. Because of the complexity of the individual boards and subassemblies, do not attempt to make repairs at the component level or modifications to any printed wiring board. Improper repairs can create a safety hazard. Any indication of component replacement or printed wiring board modification may void any warranty or exchange allowances.

## 2.1 Computer Setup

Computer Setup is a system information and customization utility that can be used even when your operating system is not working or will not load. This utility includes settings that are not available in Windows.

### Using Computer Setup

Information and settings in Computer Setup are accessed from the Main, Security, Advanced, or Tools menus:

1. Turn on or restart the notebook. Press **f10** while the F10 = ROM-Based Setup message is displayed in the lower-left corner of the screen.
   - ❏ To change the language, use the cursor control keys to navigate to the **Advanced** menu**.**
   - ❏ To view navigation information, press **f1.**
   - ❏ To return to the Computer Setup menu, press **esc.**

2. Select the **Main, Security, Advanced,** or **Tools** menu.
3. To close Computer Setup and restart the notebook:
   - ❏ Select **Exit > Exit Saving Changes,** and then press **enter.**

   – or –

   - ❏ Select **Exit > Exit Discarding Changes,** and then press **enter.**

   – or –

   - ❏ Select **Exit > Load Setup Defaults,** and then press **enter.**
4. When you are prompted to confirm your action, press **f10.**

# Selecting from the Main Menu

**Table 2-1**

**Main Menu**

| Select | To Do This |
|---|---|
| System Information | ■ Change the system time and system date.<br>■ View identification information about the notebook.<br>■ View specification information about the processor, memory and cache size, and system ROM. |

# Selecting from the Security Menu

**Table 2-2**

**Security Menu**

| Select | To Do This |
|---|---|
| Administrator Password | Enter, change, or delete an Administrator password. |
| Power-on Password | Enter, change, or delete a power-on password. |
| DriveLock Passwords | Enable/disable DriveLock; change a DriveLock user or master password.<br><br>✎ DriveLock Settings are accessible only when you enter Computer Setup by turning on (not restarting) the notebook. |
| Password Options<br>(Password options can be selected only when a power-on password has been set.) | Enable/disable:<br>■ QuickLock<br>■ QuickLock on standby<br>■ QuickBlank<br><br>✎ To enable QuickLock on standby or QuickBlank, you must first enable QuickLock. |
| Device Security | Enable/disable:<br>■ Diskette drive startup*<br>■ CD-ROM or diskette startup<br><br>✎ Settings for a DVD-ROM can be entered in the CD-ROM field. |

*Not applicable to SuperDisk LS-120 drives.

# Selecting from the Advanced Menu

**Table 2-3**

**Advanced Menu**

| Select | To Do This |
|---|---|
| Language | Change the Computer Setup language. |
| Boot Order | Enable/disable MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system. |
| Accessibility Options | Allows electronic and information technology to be accessible to people with varying ranges of abilities. |
| Video Memory | Displays the amount of video memory available on the notebook. |

# Selecting from the Tools Menu

**Table 2-4**

**Tools Menu**

| Select | To Do This |
|---|---|
| Hard Drive Self Test | Run a quick comprehensive self test on hard drives in the system that support the test features. |

# 2.2 Troubleshooting Flowcharts

**Table 2-5**

**Troubleshooting Flowcharts Overview**

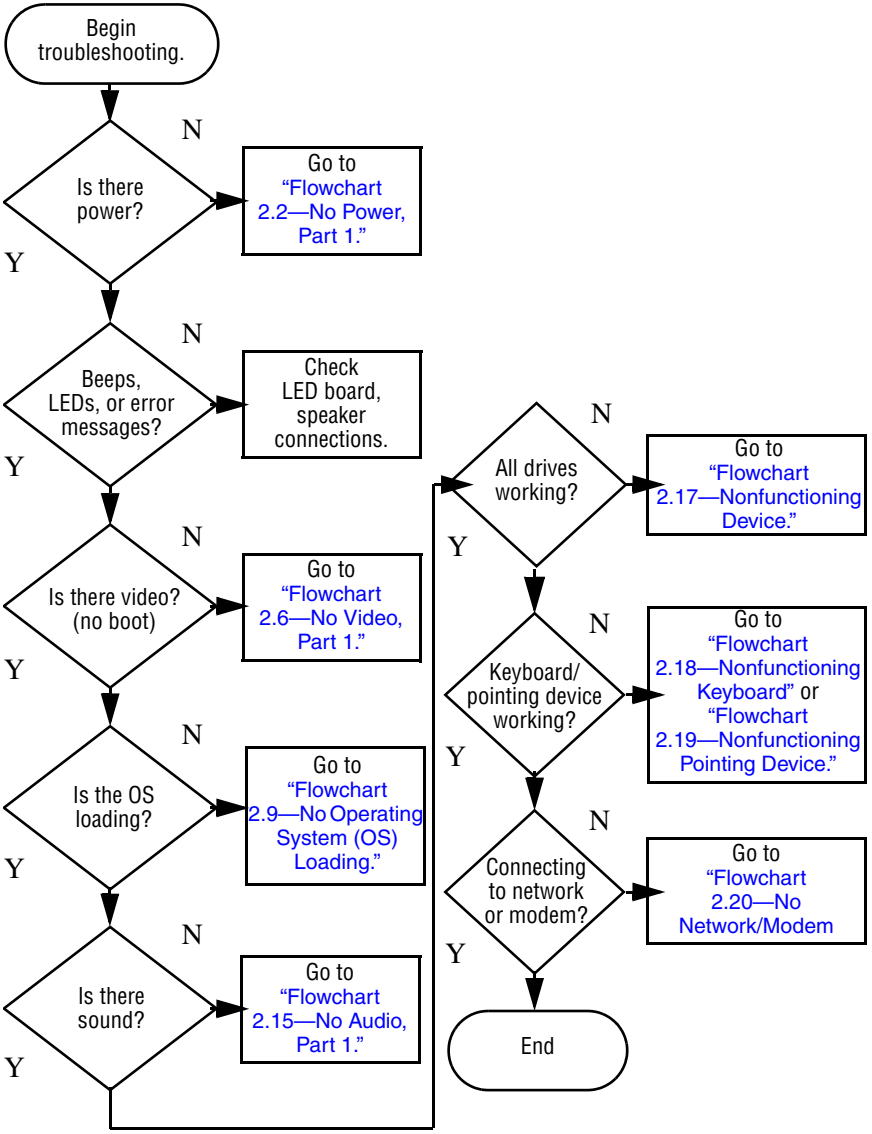
| Flowchart | Description |
|---|---|
| 2.1 | “Flowchart 2.1—Initial Troubleshooting” |
| 2.2 | “Flowchart 2.2—No Power, Part 1” |
| 2.3 | “Flowchart 2.3—No Power, Part 2” |
| 2.4 | “Flowchart 2.4—No Power, Part 3” |
| 2.5 | “Flowchart 2.5—No Power, Part 4” |
| 2.6 | “Flowchart 2.6—No Video, Part 1” |
| 2.7 | “Flowchart 2.7—No Video, Part 2” |
| 2.8 | “Flowchart 2.8—Nonfunctioning Expansion Base (if applicable)” |
| 2.9 | “Flowchart 2.9—No Operating System (OS) Loading” |
| 2.10 | “Flowchart 2.10—No OS Loading, Hard Drive, Part 1” |
| 2.11 | “Flowchart 2.11—No OS Loading, Hard Drive, Part 2” |
| 2.12 | “Flowchart 2.12—No OS Loading, Hard Drive, Part 3” |
| 2.13 | “Flowchart 2.13—No OS Loading, Diskette Drive” |

**Table 2-5**

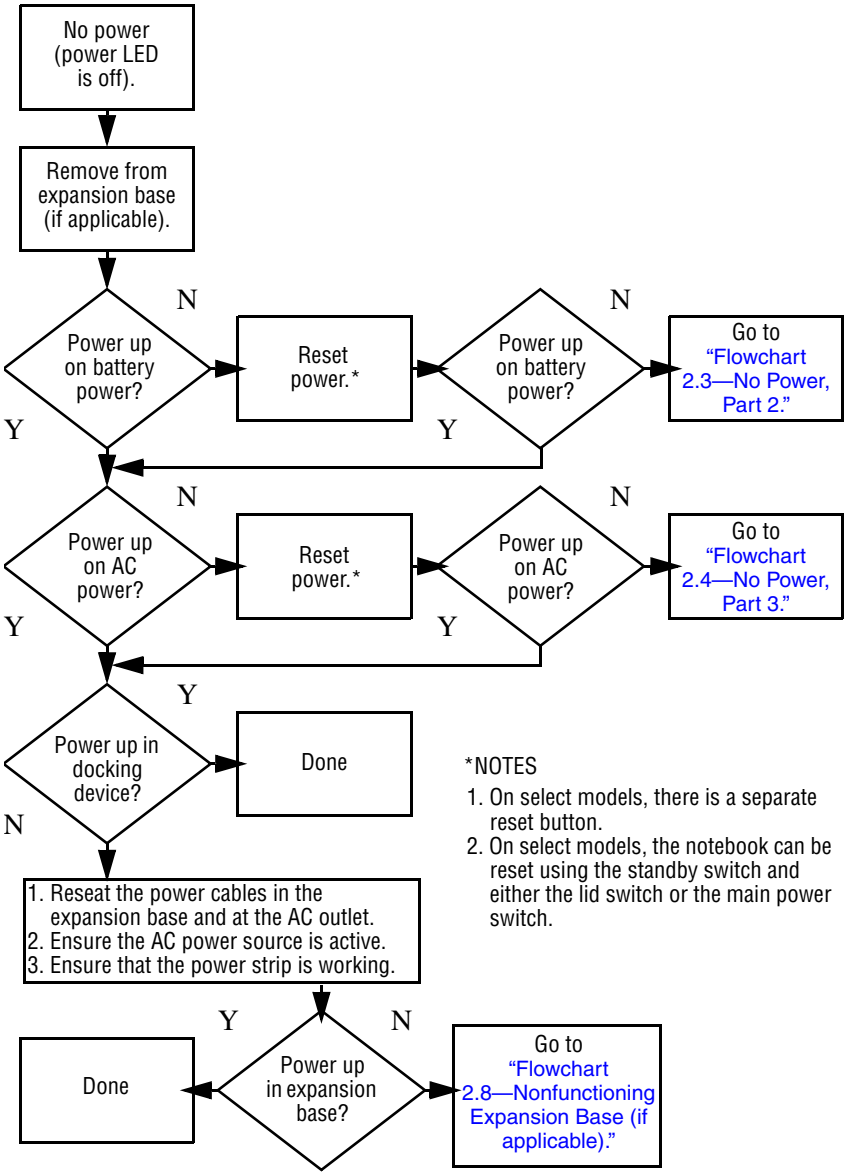
**Troubleshooting Flowcharts Overview *(Continued)***

| Flowchart | Description |
|---|---|
| 2.14 | “Flowchart 2.14—No OS Loading, Optical Drive” |
| 2.15 | “Flowchart 2.15—No Audio, Part 1” |
| 2.16 | “Flowchart 2.16—No Audio, Part 2” |
| 2.17 | “Flowchart 2.17—Nonfunctioning Device” |
| 2.18 | “Flowchart 2.18—Nonfunctioning Keyboard” |
| 2.19 | “Flowchart 2.19—Nonfunctioning Pointing Device” |
| 2.20 | “Flowchart 2.20—No Network/Modem Connection” |

# Flowchart 2.1—Initial Troubleshooting



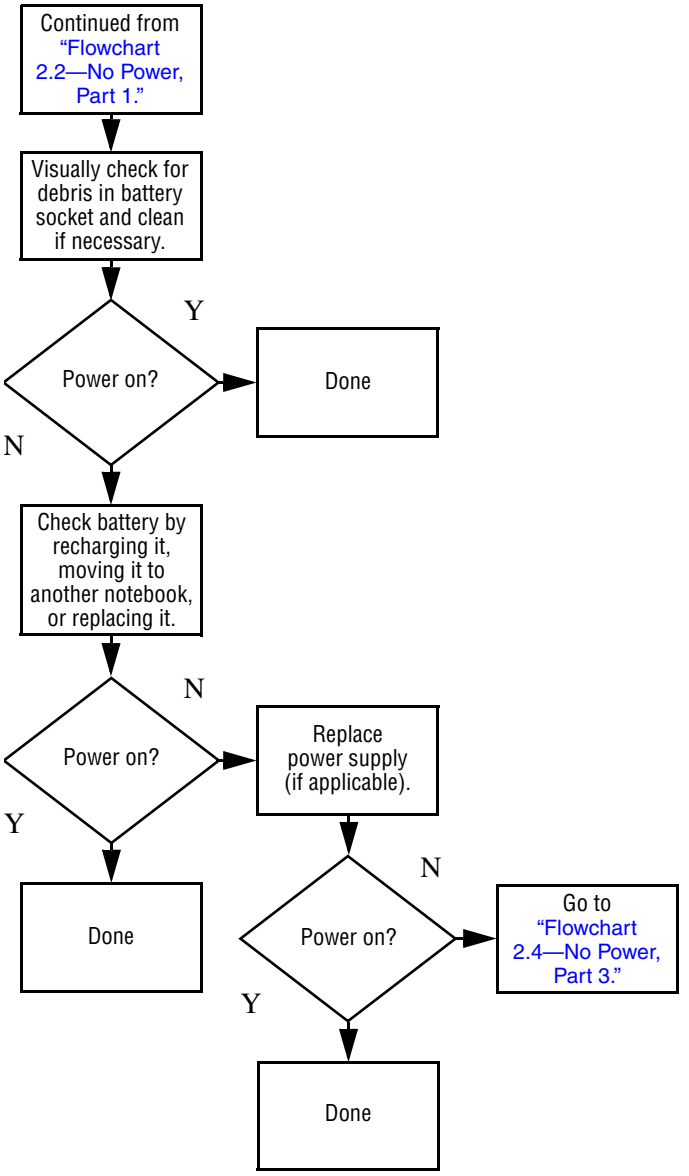
# Flowchart 2.2—No Power, Part 1



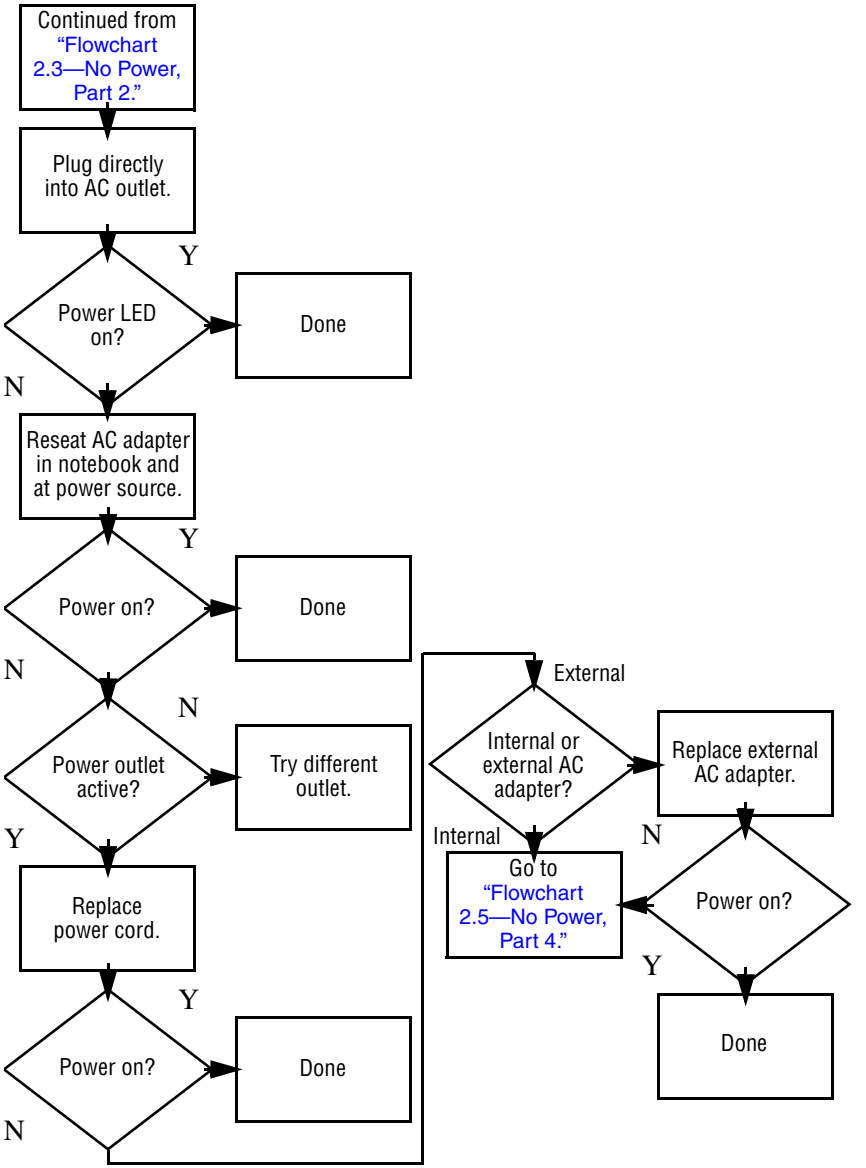

*NOTES

1. On select models, there is a separate reset button.
2. On select models, the notebook can be reset using the standby switch and either the lid switch or the main power switch.

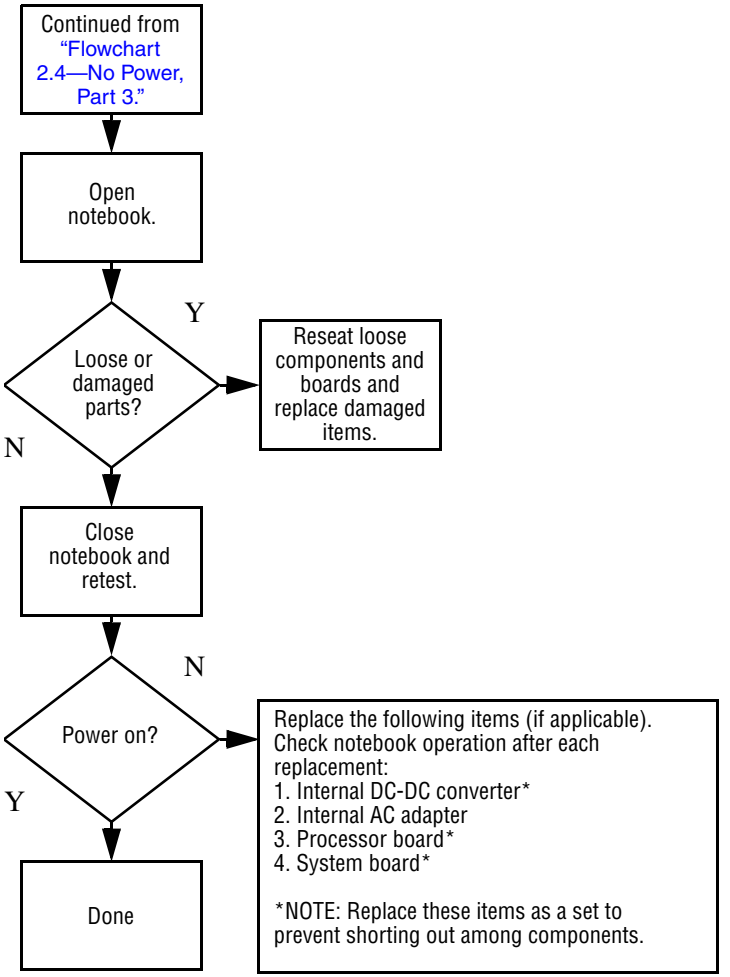
# Flowchart 2.3—No Power, Part 2



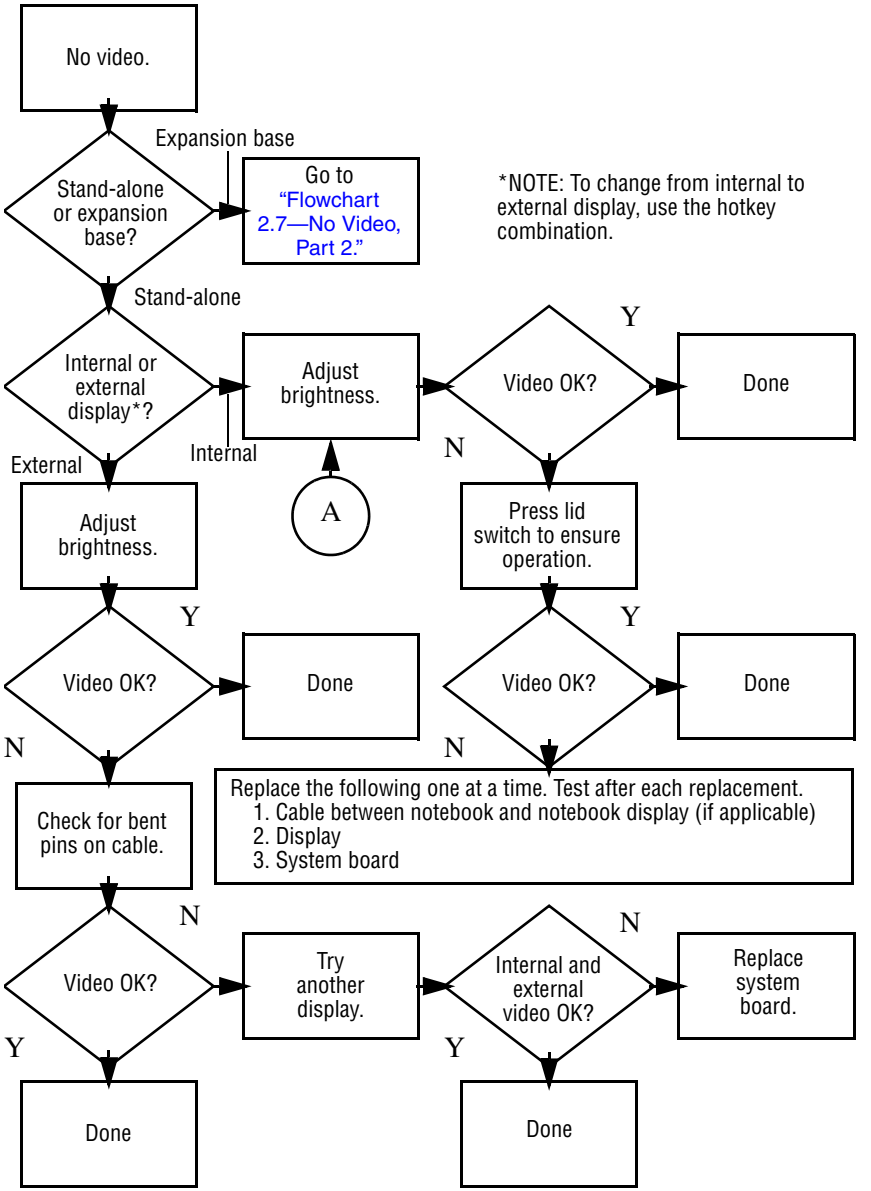
# Flowchart 2.4—No Power, Part 3



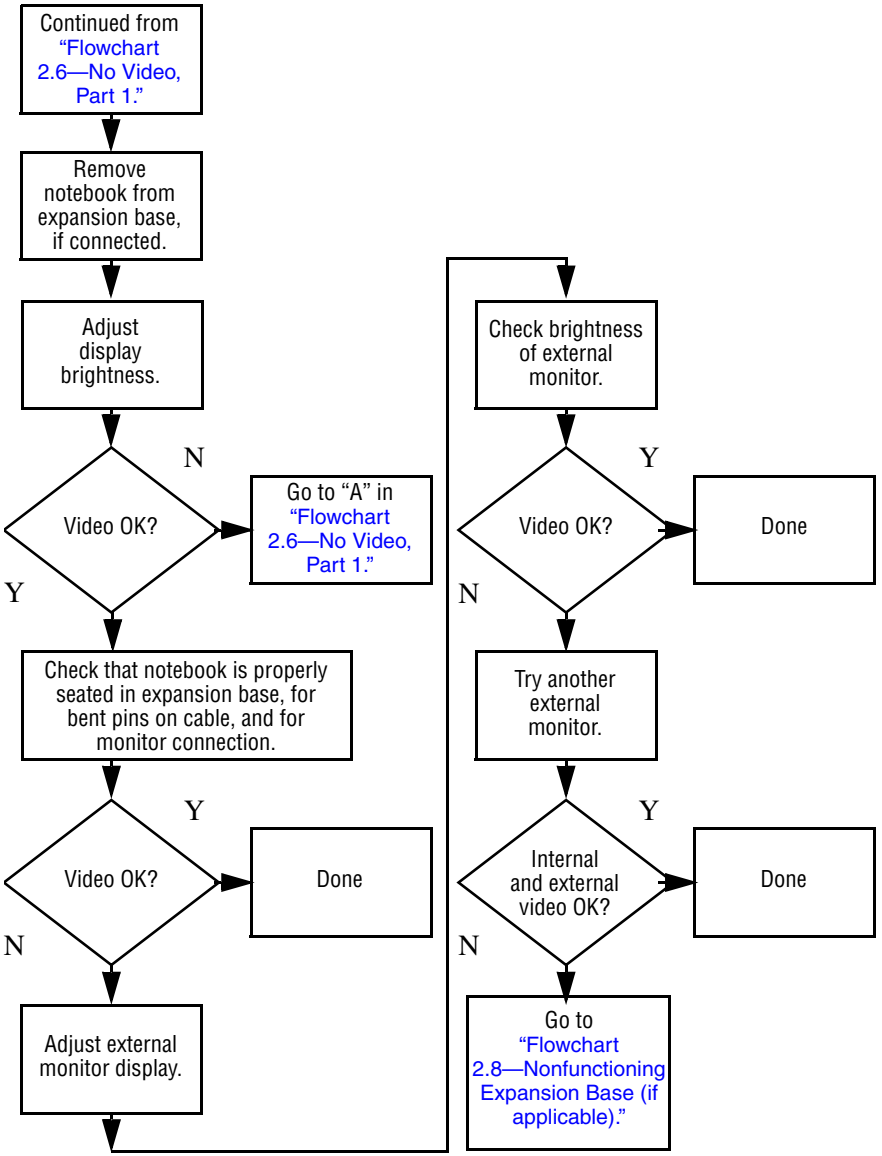
# Flowchart 2.5—No Power, Part 4



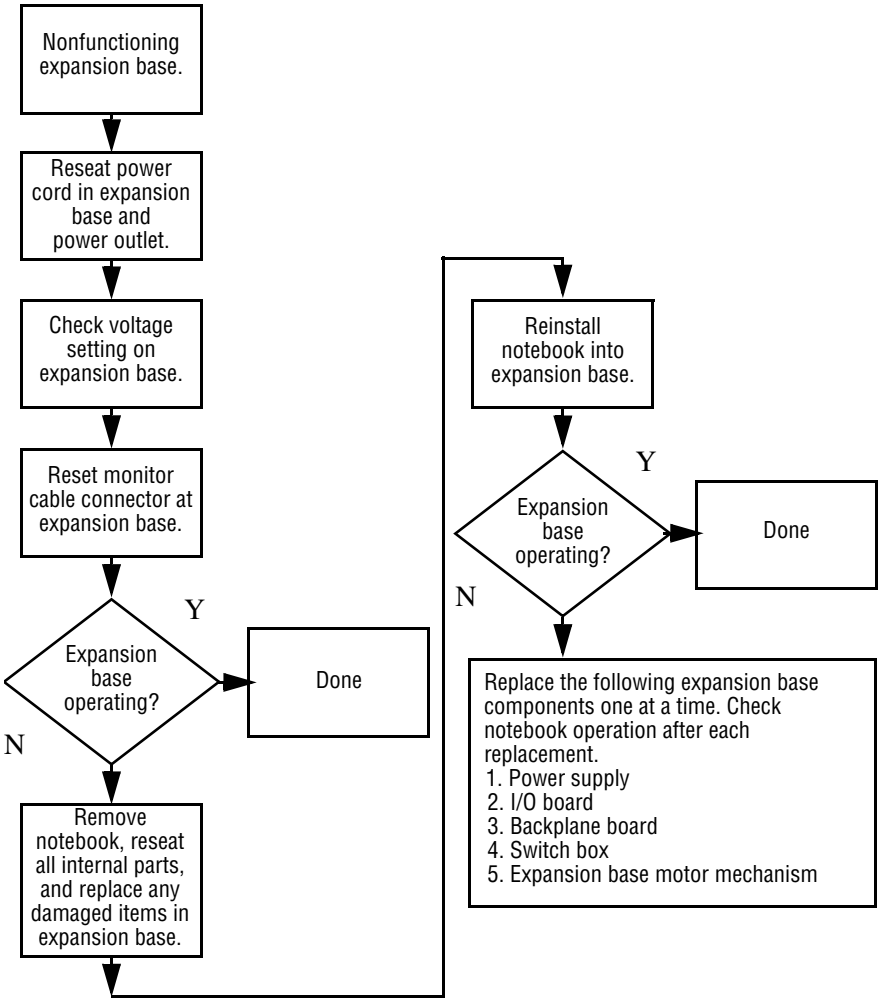
# Flowchart 2.6—No Video, Part 1



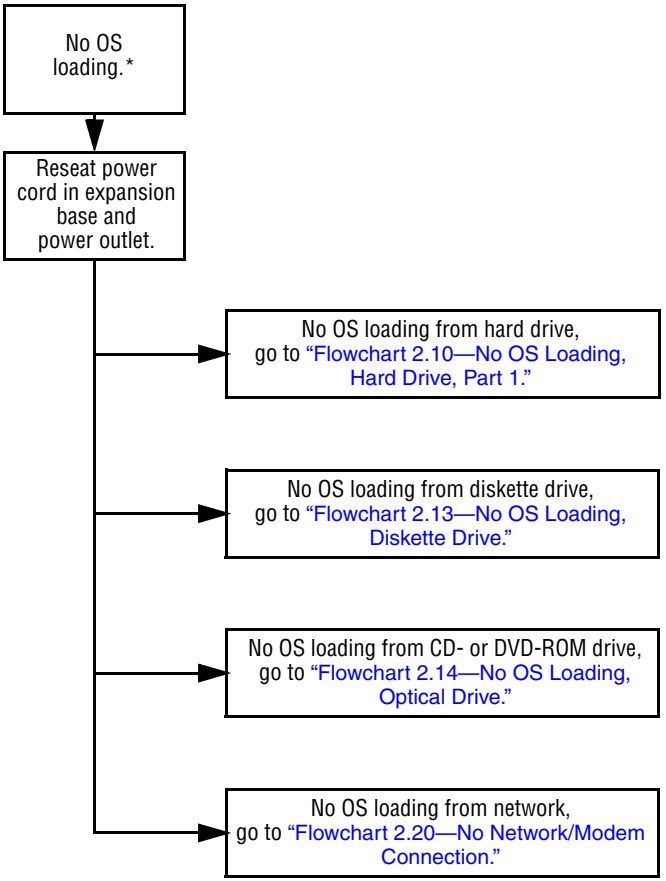
# Flowchart 2.7—No Video, Part 2



# Flowchart 2.8—Nonfunctioning Expansion Base (if applicable)

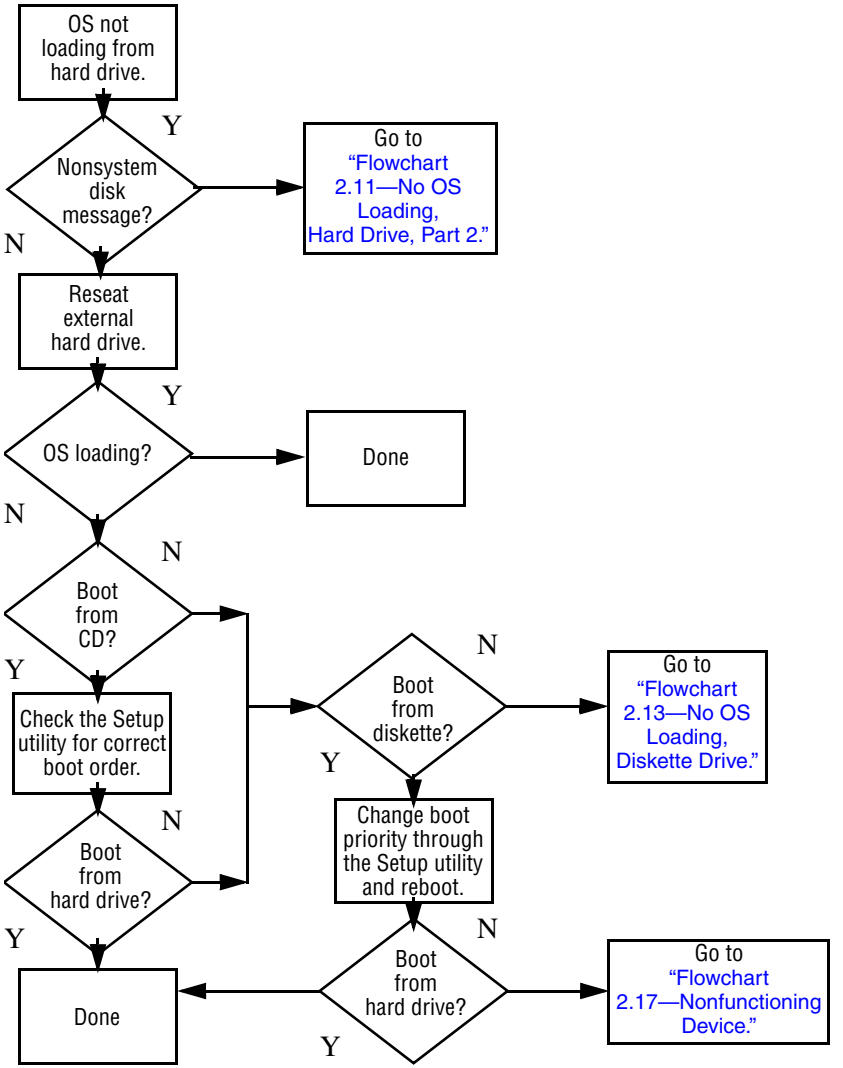


# Flowchart 2.9—No Operating System (OS) Loading

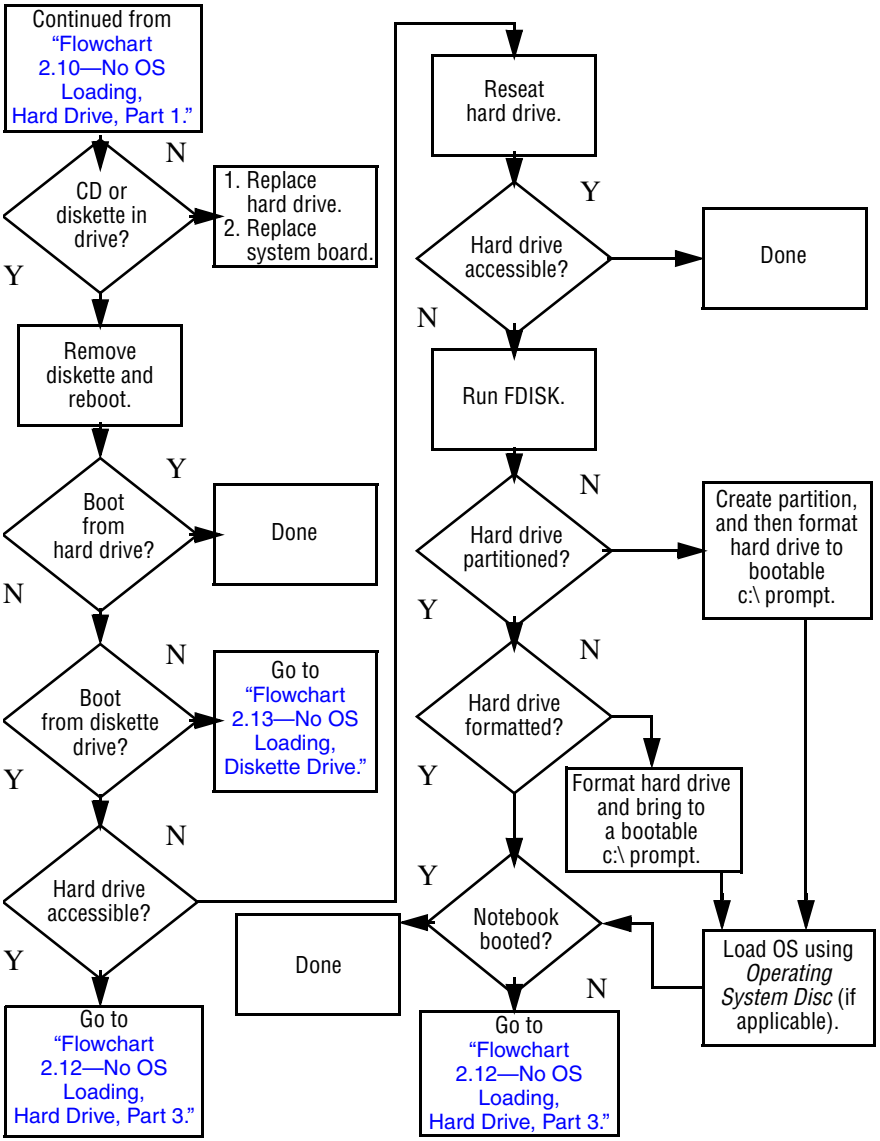



*NOTE: Before beginning troubleshooting, always check cable connections, cable ends, and drives for bent or damaged pins.

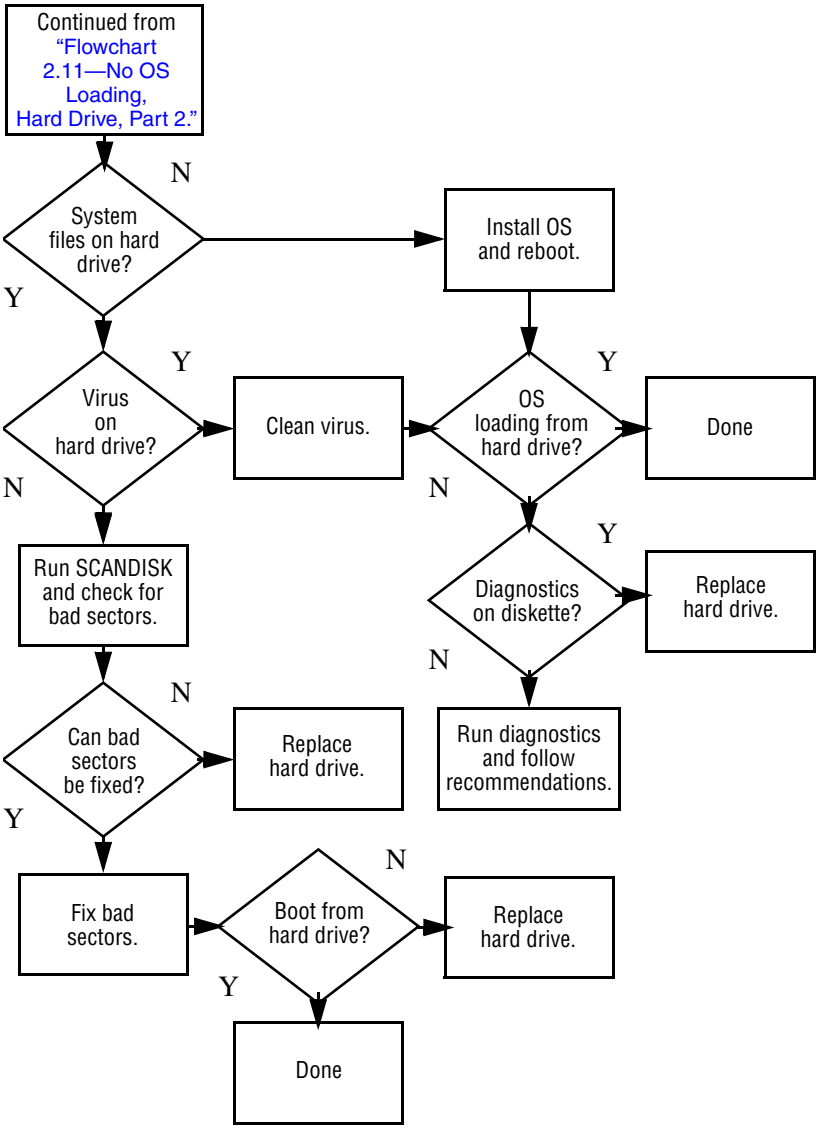
# Flowchart 2.10—No OS Loading, Hard Drive, Part 1



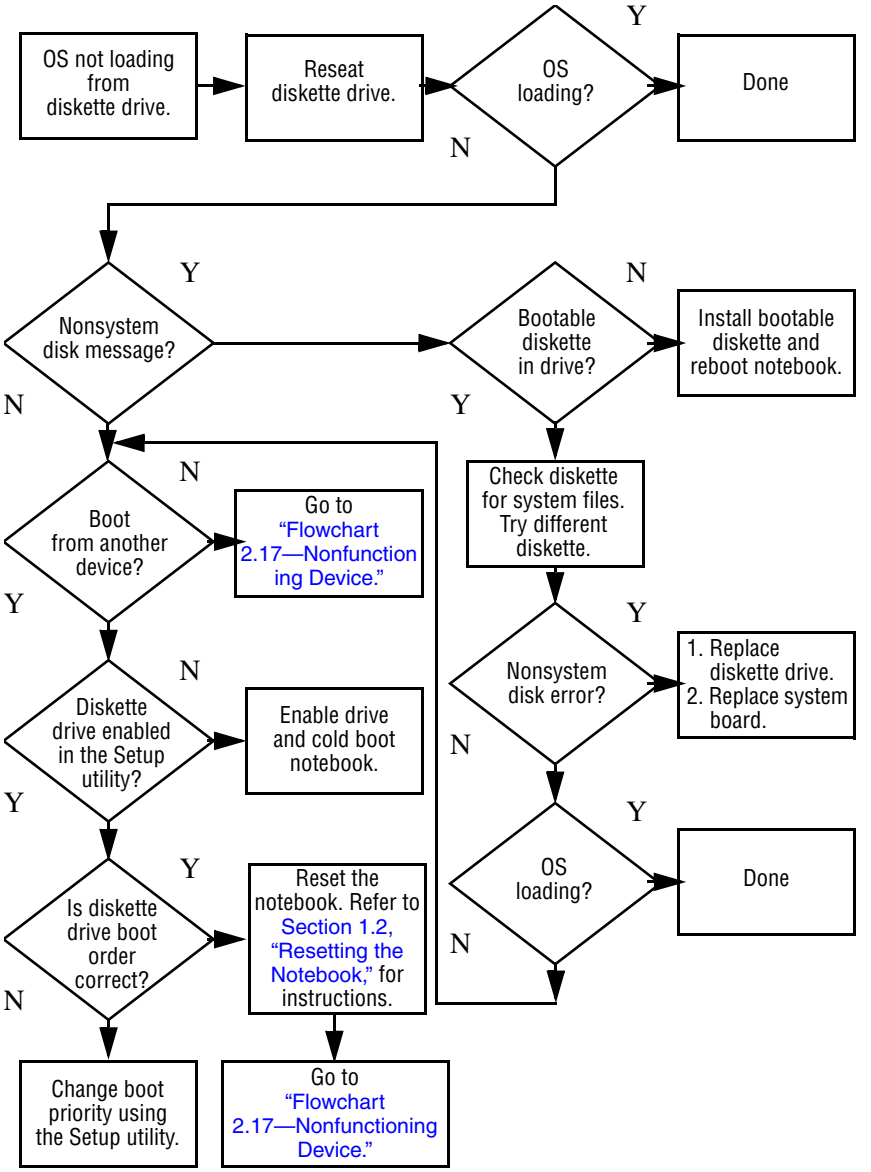
# Flowchart 2.11—No OS Loading, Hard Drive, Part 2



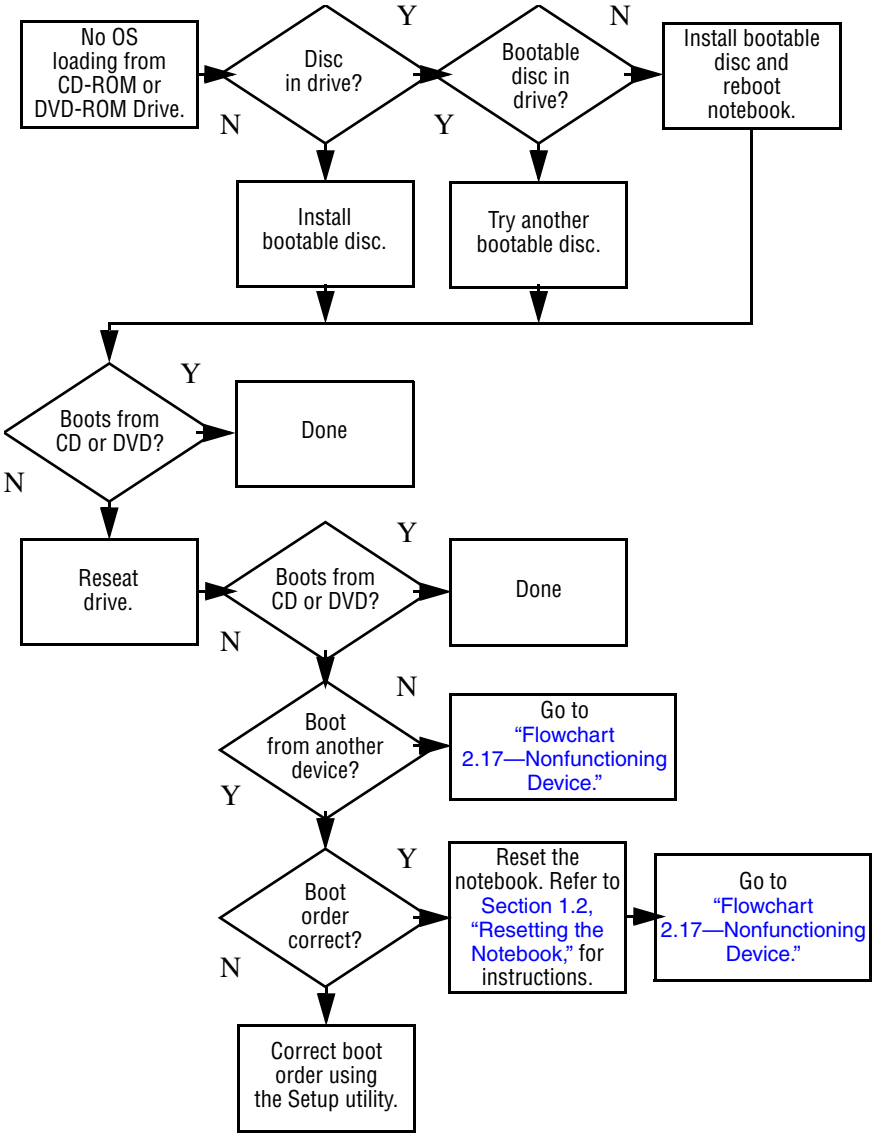
# Flowchart 2.12—No OS Loading, Hard Drive, Part 3



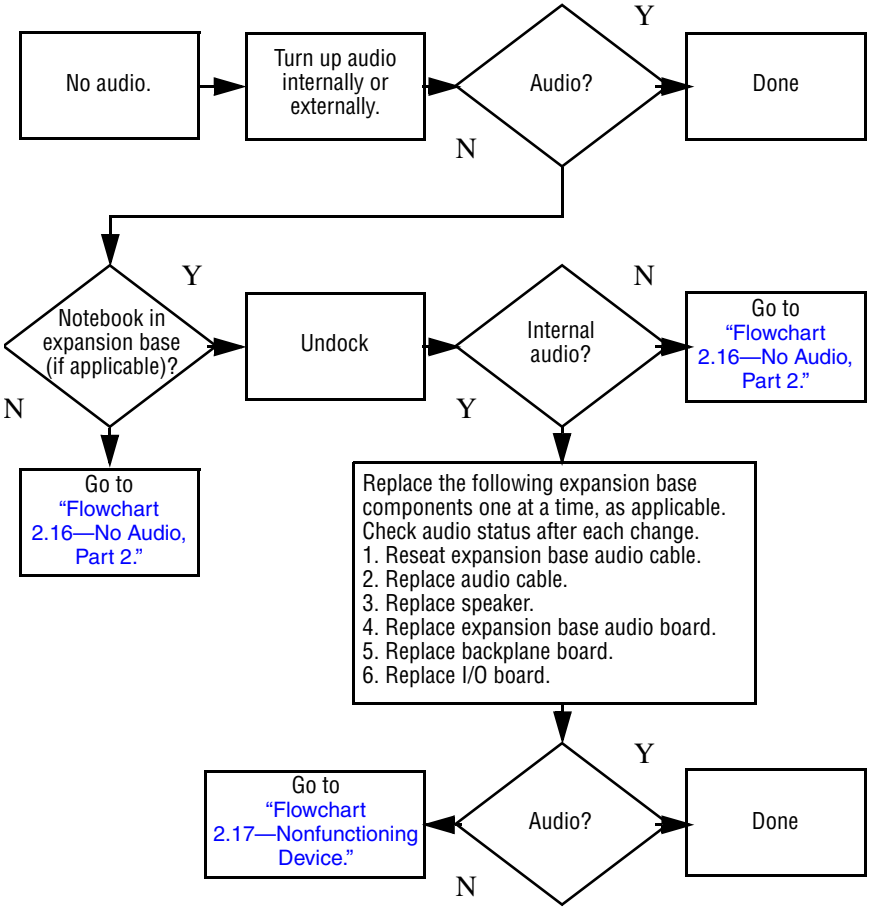
# Flowchart 2.13—No OS Loading, Diskette Drive



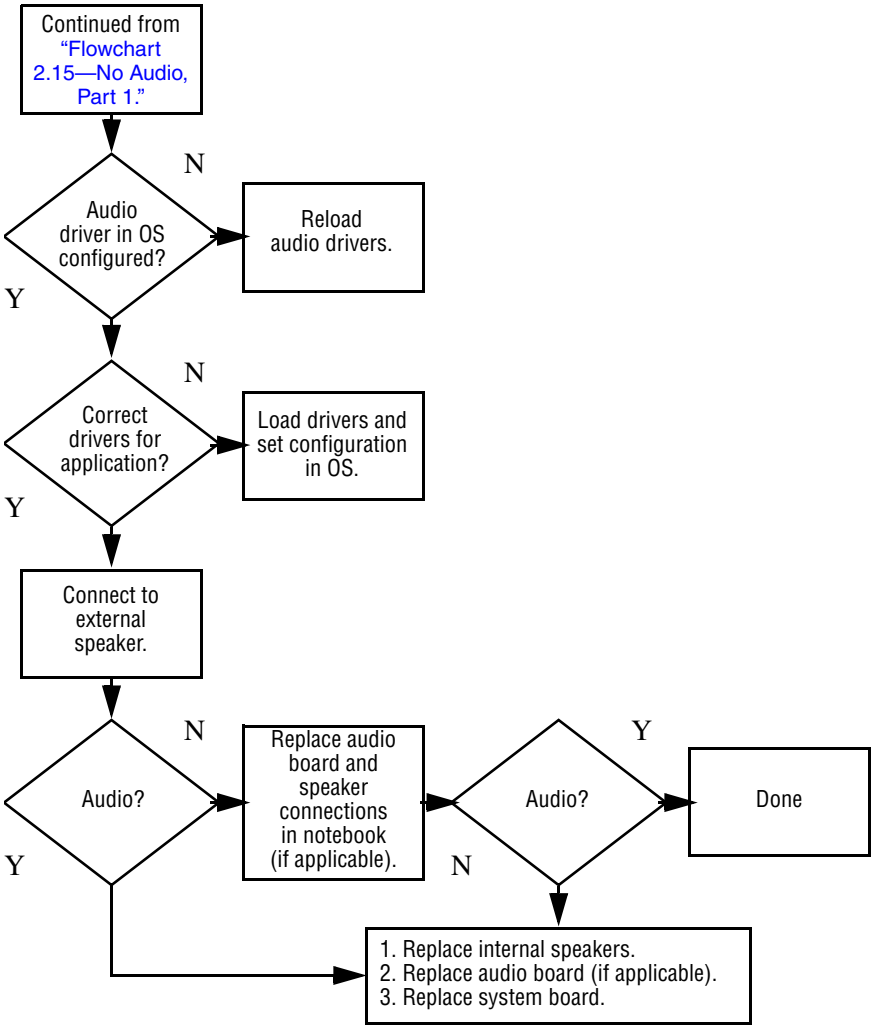
# Flowchart 2.14—No OS Loading, Optical Drive



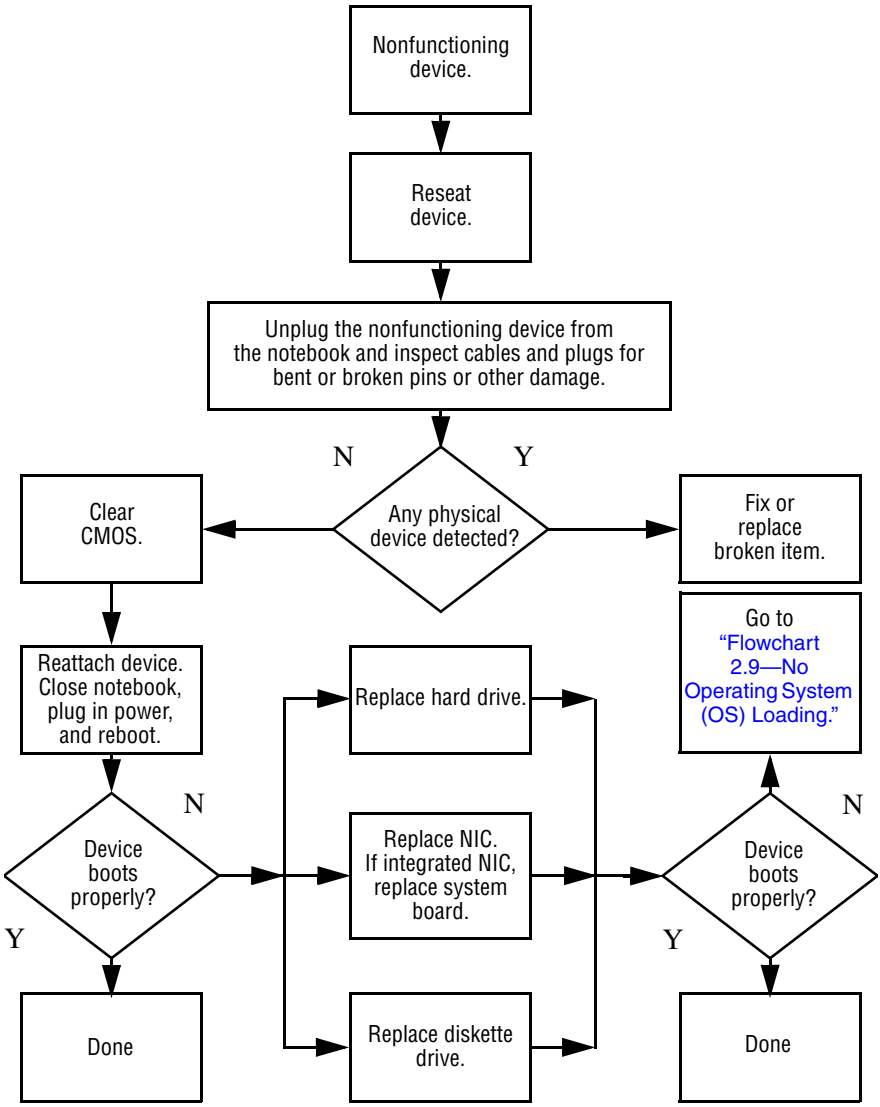
# Flowchart 2.15—No Audio, Part 1



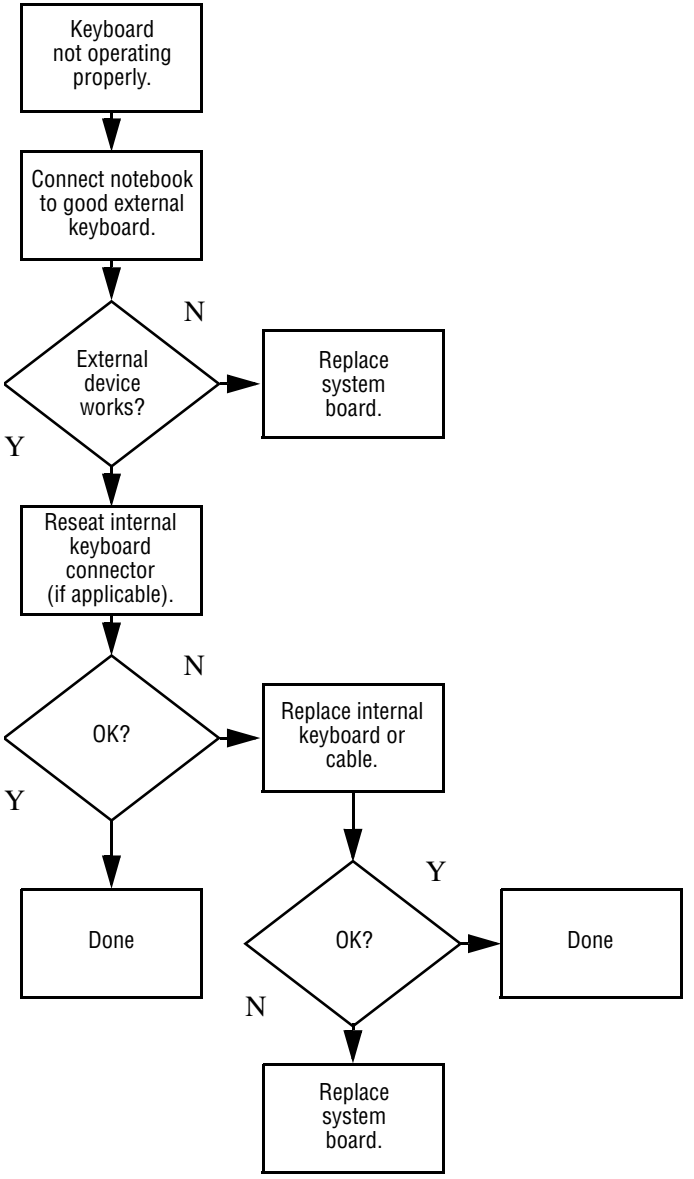
# Flowchart 2.16—No Audio, Part 2



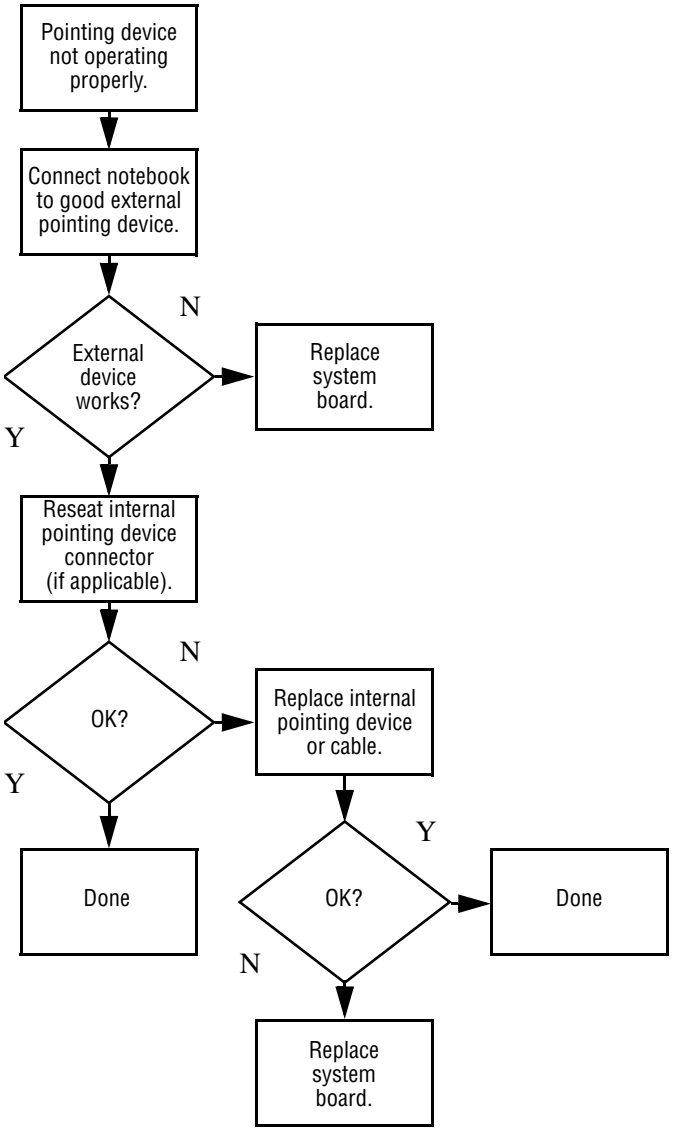
# Flowchart 2.17—Nonfunctioning Device



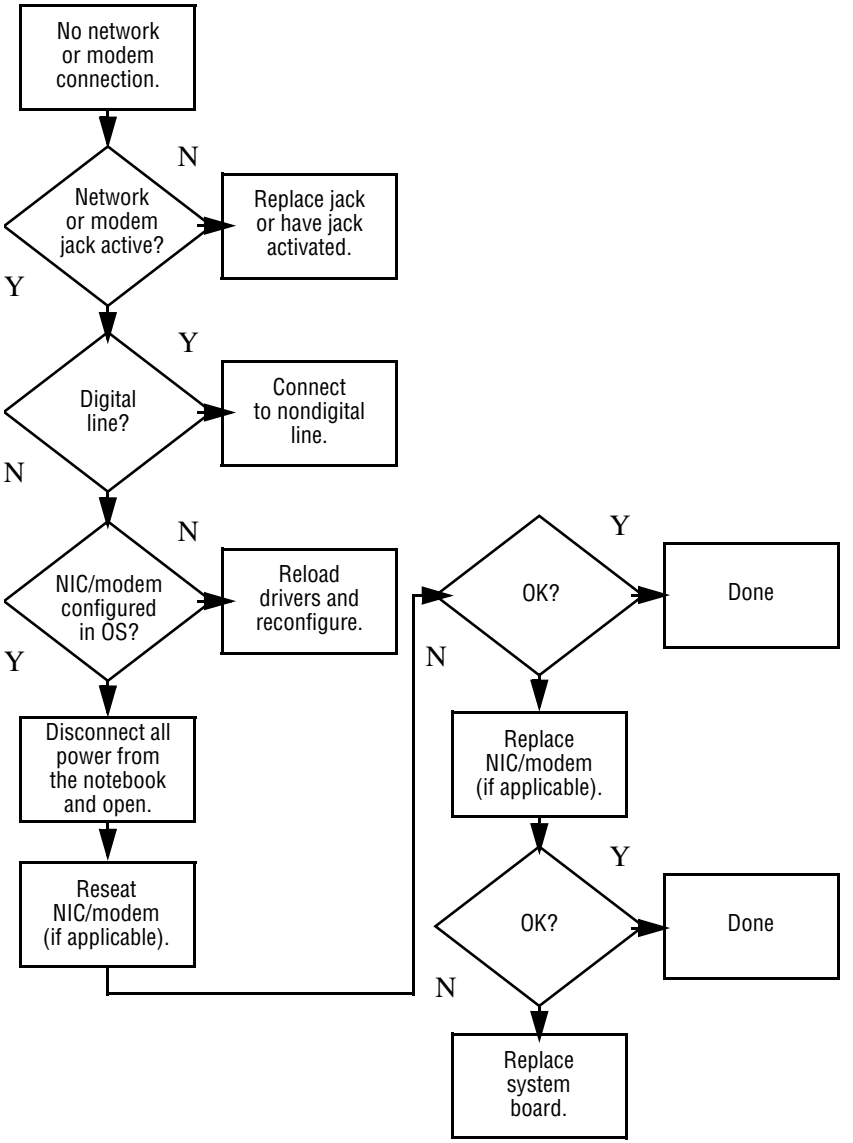
# Flowchart 2.18—Nonfunctioning Keyboard



# Flowchart 2.19—Nonfunctioning Pointing Device



# Flowchart 2.20—No Network/Modem Connection



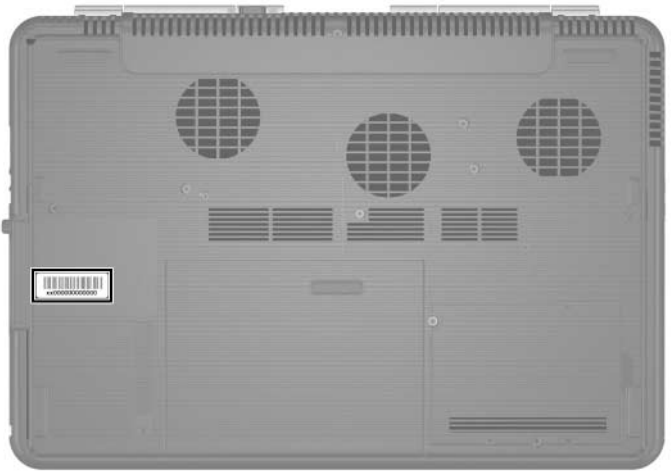
# 3

# Illustrated Parts Catalog

This chapter provides an illustrated parts breakdown and a reference for spare part numbers and option part numbers.

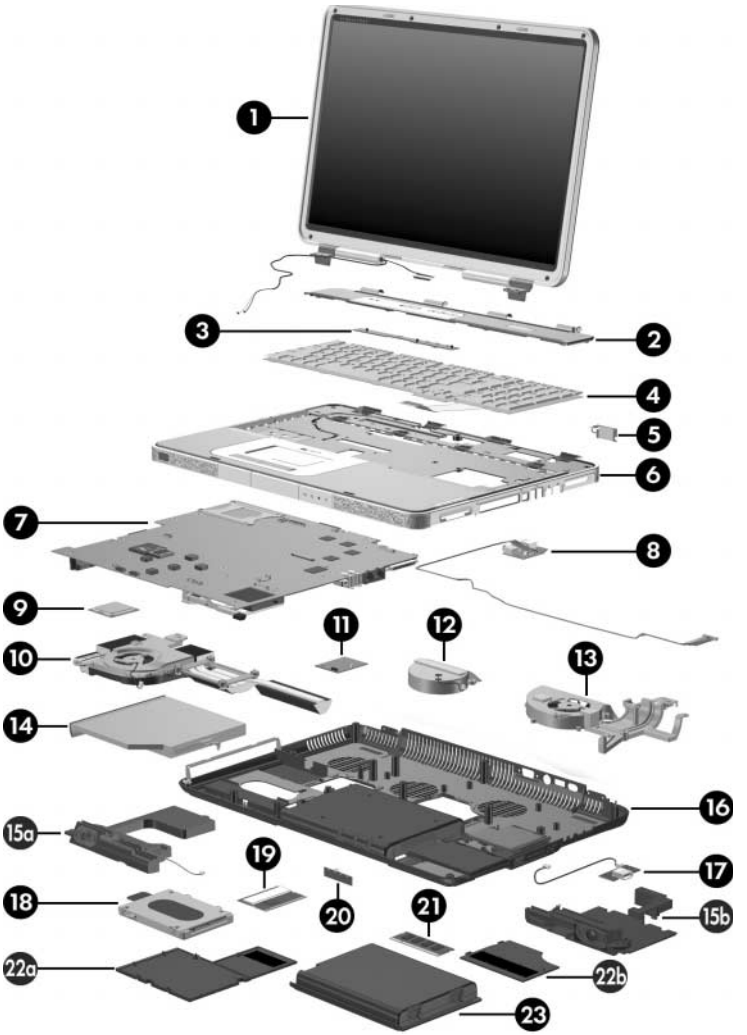
## 3.1 Serial Number Location

When ordering parts or requesting information, provide the notebook serial number and model number located on the bottom of the notebook.



*Serial Number Location*

# 3.2 Notebook Major Components

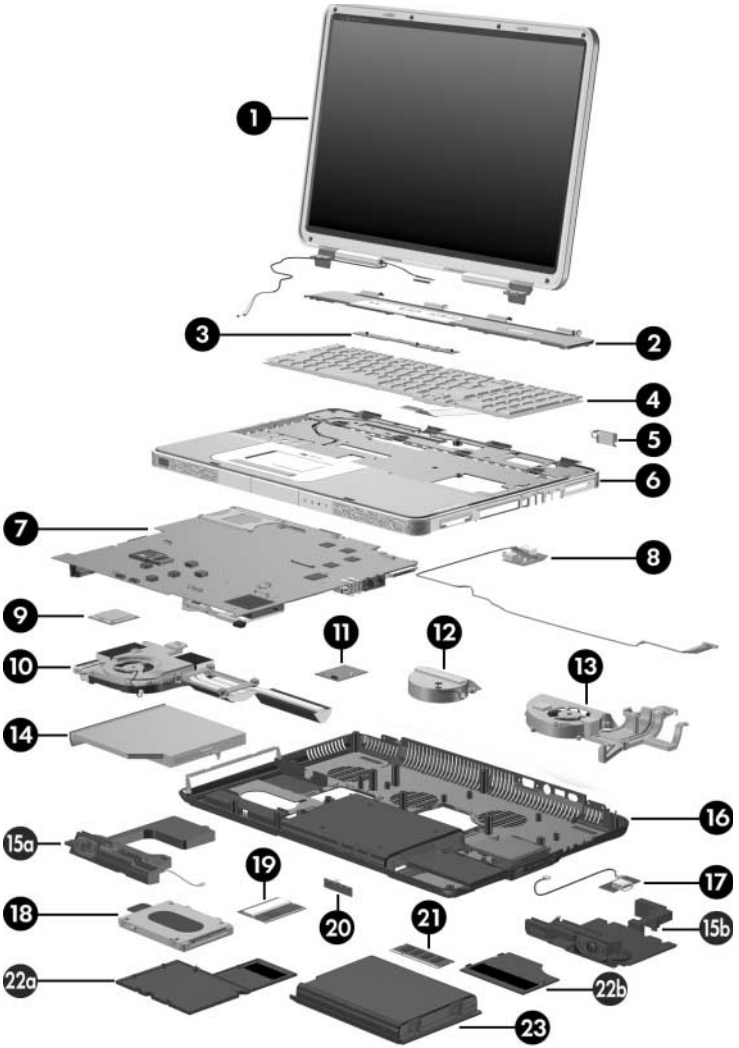



*Notebook Major Components*

## Table 3-1

## Spare Parts: Notebook Major Components

| Item | Description | Spare Part Number |
|---|---|---|
| 1 | **Display assemblies** (include wireless antenna boards and cables) | |
| | For use only on Compaq Presario X6000 models | |
| | 17.0-inch, WSXGA+WVA with Brightview | 377217-001 |
| | 17.0-inch, WXGA+WVA with Brightview | 377216-001 |
| | 17.0-inch, WXGA+WVA | 377215-001 |
| | For use only on HP Compaq nx9600 models | |
| | 17.0-inch, WSXGA+WVA with Brightview | 377219-001 |
| | 17.0-inch, WSXGA+WVA | 377218-001 |
| 2 | **Switch covers** | |
| | For use only on Compaq Presario X6000 models with wireless | 374755-001 |
| | For use only on Compaq Presario X6000 models without wireless | 380445-001 |
| | For use only on HP Compaq nx9600 models with wireless | 378733-001 |
| | For use only on HP Compaq nx9600 models without wireless | 380446-001 |
| 3 | **LED Board** (includes cable) | 378772-001 |
| 4 | **Keyboards** | |
| | For use only on Compaq Presario X6000 models in the United States | 374742-001 |
| | For use only on HP Compaq nx9600 models | |
| | Brazil 378520-201 Latin America | 378520-161 |
| | French Canada 378520-121 United States | 378520-001 |

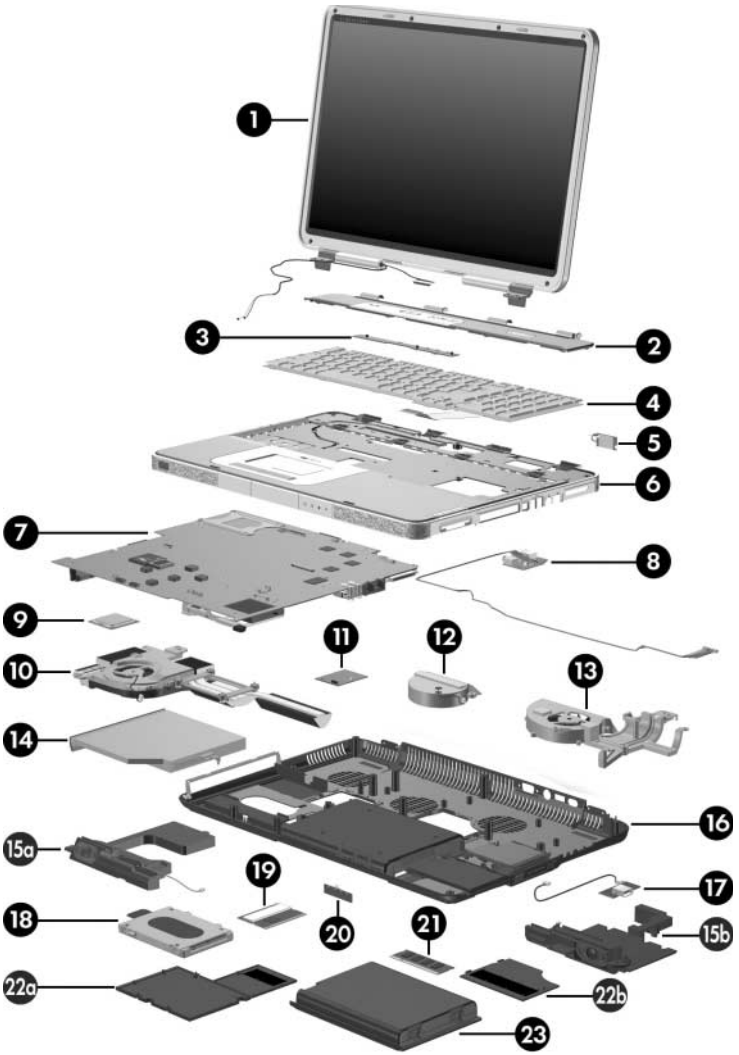



*Notebook Major Components*

**Table 3-1**

**Spare Parts: Notebook Major Components *(Continued)***

| Item | Description | Spare Part Number |
|---|---|---|
| 5 | **Broadcomm Bluetooth wireless card** (includes cable) | 376651-001 |
| 6 | **Top covers** (include TouchPad) | |
| | For use only on Compaq Presario X6000 notebook models | 374751-001 |
| | For use only on HP Compaq nx9600 models | 378770-001 |
| 7 | **System boards** (include disk cell RTC battery) | |
| | For use on Compaq Presario X6000 models (includes PC Card cage and expansion port bracket) | |
| | M24P with 256 MB RAM | 374711-001 |
| | M24P with 128 MB RAM | 374709-001 |
| | M22P with 64 MB RAM | 374707-001 |
| | For use on HP Compaq nx9600 models | |
| | M24P with 128 MB RAM | 377209-001 |
| | M22P with 64 MB RAM | 377208-001 |
| 8 | **Audio/USB board** | 374761-001 |
| | **Audio/USB board cable** (not illustrated) | 433822-001 |
| 9 | **Processors** (include thermal pad) | |
| | Intel Pentium 4 560 (3.6-GHz) | 377213-001 |
| | Intel Pentium 4 550 (3.4-GHz) | 374718-001 |
| | Intel Pentium 4 540 (3.2-GHz) | 374717-001 |
| | Intel Pentium 4 530 (3.0-GHz) | 374716-001 |
| | Intel Pentium 4 520 (2.8-GHz) | 374715-001 |
| 10 | **Heat sink module** (includes fan and thermal paste) | 380031-001 |
| 11 | **Modem board** | 374758-001 |
| 12 | **Base enclosure small fan** | 380029-001 |
| 13 | **Base enclosure large fan** | 380028-001 |

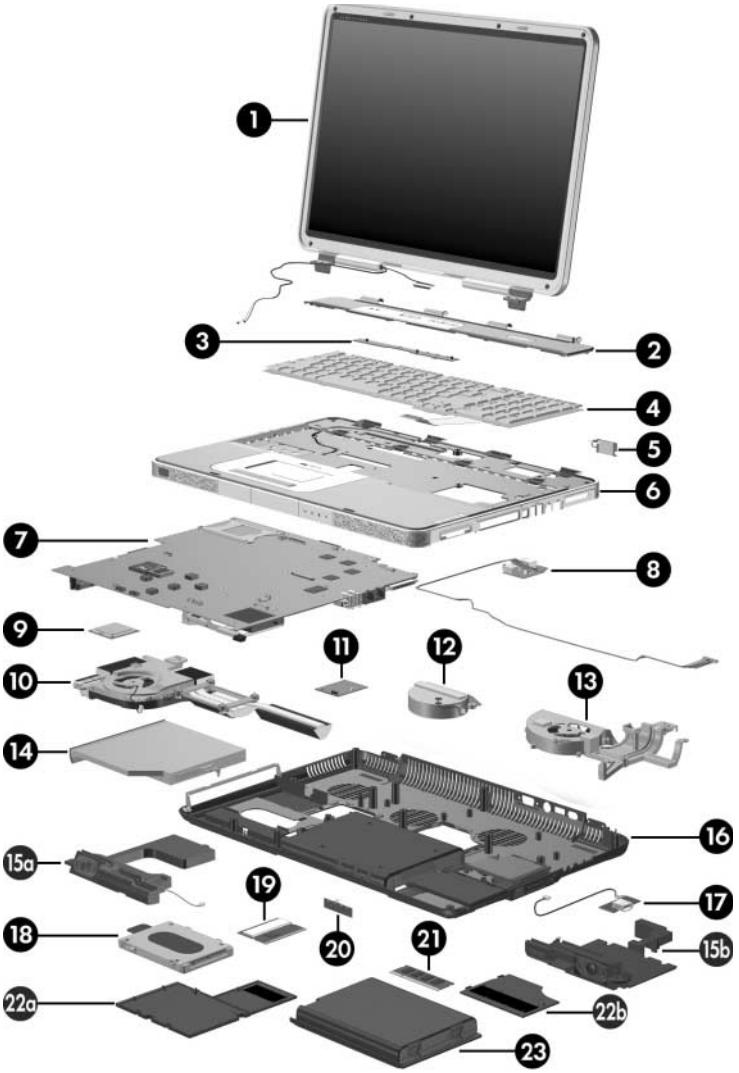



*Notebook Major Components*

**Table 3-1**

**Spare Parts: Notebook Major Components *(Continued)***

| Item | Description | Spare Part Number |
|---|---|---|
| 14 | **Optical drives** (include bezel) | |
| | For use only on Compaq Presario X6000 notebook models | |
| | 8X DVD±RW/R and CD-RW Combo Drive | 374738-001 |
| | 24X DVD/CD-RW Combo Drive | 374736-001 |
| | Dual Format, Double Layer | 382080-001 |
| | 8X Dual Format, Light Scribe | 383609-001 |
| | For use only on HP Compaq nx9600 models | |
| | 8X DVD±RW/R and CD-RW Combo Drive | 378519-001 |
| | 24X DVD/CD-RW Combo Drive | 378518-001 |
| | 8X Dual Format, Light Scribe | 383610-001 |
| | **Speakers** | 378522-001 |
| 15a | Left | |
| 15b | Right | |
| 16 | **Base enclosure** | 374753-001 |
| 17 | **Digital drive board** (includes cable) | 374759-001 |
| 18 | **Hard drives** (include frame) | |
| | 7200-rpm | |
| | 60-GB | 374732-001 |
| | 5400-rpm | |
| | 100-GB | 380258-001 |
| | 80-GB | 374731-001 |
| | 4200-rpm | |
| | 100-GB | 374730-001 |
| | 80-GB | 374729-001 |
| | 60-GB | 374728-001 |
| | 40-GB | 378767-001 |




*Notebook Major Components*

**Table 3-1**

**Spare Parts: Notebook Major Components *(Continued)***

| Item | Description | Spare Part Number |
|---|---|---|
| 19 | **Mini PCI communications cards** | |
| | 802.11b/g, for use in most of the world (MOW) | 373047-001 |
| | 802.11b/g, for use in the rest of the world (ROW) | 373048-001 |
| | 802.11a/b/g combination card, for use in the United States | 376650-001 |
| 20 | **Front panel LED board** (includes cable) | 378774-001 |
| 21 | **Memory modules** (400-DDR) | |
| | 1024-MB | 374726-001 |
| | 512-MB | 374725-001 |
| | 256-MB | 374724-001 |
| | **Miscellaneous Plastics Kit** | 374747-001 |
| | Includes: | |
| 22a | Hard drive cover (includes 4 captive screws) | |
| 22b | Memory module compartment cover (includes 2 captive screws) | |
| | Not illustrated:<br>Notebook feet<br>SD Card slot space saver<br>PC Card slot space saver | |
| 23 | **Battery pack,** 12-cell, 2.2-AHr | 380443-001 |

# 3.3 Mass Storage Devices

**Table 3-2**

**Spare Part Number Information**

| Item | Description | Spare Part Number |
|---|---|---|
| 1 | **Optical drives** | |
| | For use only on Compaq Presario X6000 notebook models | |
| | 8X DVD±RW/R and CD-RW Combo Drive | 374738-001 |
| | 24X DVD/CD-RW Combo Drive | 374736-001 |
| | Dual Format, Double Layer | 382080-001 |
| | 8X Dual Format, Light Scribe | 383609-001 |
| | For use only on HP Compaq nx9600 models | |
| | 8X DVD±RW/R and CD-RW Combo Drive | 378519-001 |
| | 24X DVD/CD-RW Combo Drive | 378518-001 |
| | 8X Dual Format, Light Scribe | 383610-001 |
| 2 | **Hard drives** (include frame) | |
| | 7200-rpm | |
| | 60-GB | 374732-001 |
| | 5400-rpm | |
| | 100-GB | 380258-001 |
| | 80-GB | 374731-001 |
| | 4200-rpm | |
| | 100-GB | 374730-001 |
| | 80-GB | 374729-001 |
| | 60-GB | 374728-001 |
| | 40-GB | 378767-001 |
| | **USB digital drive** (not illustrated) | 364727-001 |
| | **USB 1.1 diskette drive** (not illustrated) | 344897-001 |

# 3.4 Miscellaneous Plastics Kit

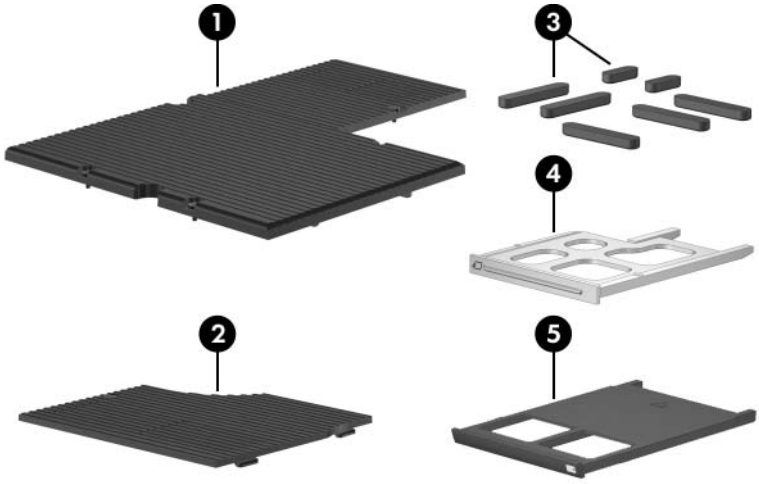



**Table 3-3**

**Spare Part Number 374747-001**

| Item | Description | Spare Part Number |
|---|---|---|
| 1 | Hard drive cover (includes 4 captive screws) | |
| 2 | Memory module compartment cover (includes 2 captive screws) | |
| 3 | Notebook feet (7) | |
| 4 | SD Card slot space saver | |
| 5 | PC Card slot space saver | |

# 3.5 Miscellaneous (Not Illustrated)

**Table 3-4**

**Spare Part Information**

| Description | Spare Part Number |
|---|---|
| **Logo Kits** | |
| For use only on Compaq Presario X6000 models | 374749-001 |
| For use only on HP Compaq nx9600 models | 378769-001 |
| **Wired headset with volume control** | 371693-001 |
| **USB travel mouse** | 309674-001 |
| **AC adapters** | |
| 180 watt, 3-wire plug, used with 345252-xxx power cords | 374743-001 |
| 135 watt, 2-wire plug, used with 373979-xxx power cords – for use only on models with Intel Pentium 4 530 (3.0-GHz) and Intel Pentium 4 520 (2.8-GHz) processors | 378768-001 |
| **Screw Kit** (includes the following screws; refer to Appendix C, "Screw Listing," for more information on screw specifications and usage)<br>■ Phillips PM2.0×5.0 screw<br>■ Phillips PM2.5×4.0 screw<br>■ Phillips PM2.0×8.0 screw<br>■ Phillips PM2.0×12.0 shoulder screw<br>■ Phillips PM2.0×3.0 screw<br>■ Hex socket 5.0×9.0 screw lock<br>■ Phillips PM2.0×4.0 screw<br>■ Phillips PM1.5×3.5 screw | 374745-001 |

**Table 3-4**

**Spare Part Information *(Continued)***

| Description | Spare Part Number |
|---|---|
| **Power cords** (with 3-wire plug, used with 378768-001 AC adaptor) | |
| For use in: | |
| Australia and New Zealand | 373979-011 |
| Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden | 373979-021 |
| Canada, French Canada, Latin America, Taiwan, Thailand, and the United States | 373979-001 |
| Denmark | 373979-081 |
| Hong Kong and the United Kingdom | 373979-031 |
| Italy | 373979-061 |
| People's Republic of China | 373979-AA1 |
| Switzerland | 373979-111 |

**Table 3-4**

**Spare Part Information *(Continued)***

| Description | Spare Part Number |
|---|---|
| **Power cords** (with 3-wire plug, used with 374743-001 AC adaptor) | |
| For use in: | |
| Australia and New Zealand | 345252-011 |
| Brazil | 345252-201 |
| Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden | 345252-021 |
| Canada, French Canada, Latin America, Taiwan, Thailand, and the United States | 345252-001 |
| Denmark | 345252-081 |
| Hong Kong and the United Kingdom | 345252-031 |
| Italy | 345252-061 |
| People's Republic of China | 345252-AA1 |
| Switzerland | 345252-111 |

# 3.6 Sequential Part Number Listing

**Table 3-5**

**Sequential Part Number Listing**

| Spare Part Number | Description |
|---|---|
| 309674-001 | USB travel mouse |
| 345252-001 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Canada, French Canada, Latin America, Taiwan, Thailand, and the United States |
| 345252-011 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Australia and New Zealand |
| 345252-021 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden |
| 345252-031 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Hong Kong and the United Kingdom |
| 345252-061 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Italy |
| 345252-081 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Denmark |
| 345252-111 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Switzerland |
| 345252-201 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in Brazil |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 345252-AA1 | Power cord, with 3-wire plug, used with 374743-001 AC adaptor, for use only in the People's Republic of China |
| 371693-001 | Wired headset with volume control |
| 373047-001 | Mini PCI communications card, 802.11b/g, for use in most of the world (MOW) |
| 373048-001 | Mini PCI communications card, 802.11b/g, for use in the rest of the world (ROW) |
| 373979-001 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Canada, French Canada, Latin America, Taiwan, Thailand, and the United States |
| 373979-011 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Australia and New Zealand |
| 373979-021 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Belgium, Europe, Finland, France, Germany, Greece, the Netherlands, Norway, Portugal, Spain, and Sweden |
| 373979-031 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Hong Kong and the United Kingdom |
| 373979-061 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Italy |
| 373979-081 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Denmark |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 373979-111 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in Switzerland |
| 373979-AA1 | Power cord, with 3-wire plug, used with 378768-001 AC adaptor, for use only in the People's Republic of China |
| 374707-001 | System board, M22P with 64 MB RAM, for use on Compaq Presario X6000 models (includes disk cell RTC battery, PC Card cage, and expansion port bracket) |
| 374709-001 | System board, M24P with 128 MB RAM, for use on Compaq Presario X6000 models (includes disk cell RTC battery, PC Card cage, and expansion port bracket) |
| 374711-001 | System board, M24P with 256 MB RAM, for use on Compaq Presario X6000 models (includes disk cell RTC battery, PC Card cage, and expansion port bracket) |
| 374715-001 | Processor, Intel Pentium 4 520 (2.8-GHz, includes thermal pad) |
| 374716-001 | Processor, Intel Pentium 4 530 (3.0-GHz, includes thermal pad) |
| 374717-001 | Processor, Intel Pentium 4 540 (3.2-GHz, includes thermal pad) |
| 374718-001 | Processor, Intel Pentium 4 550 (3.4-GHz, includes thermal pad) |
| 374724-001 | Memory module, 400 DDR, 256-MB |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 374725-001 | Memory module, 400 DDR, 512-MB |
| 374726-001 | Memory module, 400 DDR, 1024-MB |
| 374728-001 | Hard drive, 4200-rpm, 60-GB, (includes frame) |
| 374729-001 | Hard drive, 4200-rpm, 80-GB, (includes frame) |
| 374730-001 | Hard drive, 4200-rpm, 100-GB, (includes frame) |
| 374731-001 | Hard drive, 5400-rpm, 80-GB, (includes frame) |
| 374732-001 | Hard drive, 7200-rpm, 60-GB, (includes frame) |
| 374736-001 | 24X DVD/CD-RW Combo Drive, for use only on Compaq Presario X6000 notebook models |
| 374738-001 | 8X DVD±RW/R and CD-RW Combo Drive, for use only on Compaq Presario X6000 notebook models |
| 374742-001 | Keyboard, for use only on Compaq Presario X6000 models in the United States |
| 374743-001 | AC adapter, 180 watt, 3-wire plug, used with 345252-xxx power cords |
| 374745-001 | Screw Kit (includes the following screws; refer to Appendix C, "Screw Listing," for more information on screw specifications and usage) |
| 374747-001 | Miscellaneous Plastics Kit |
| 374749-001 | Logo Kit, for use only on Compaq Presario X6000 notebook models |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 374751-001 | Top cover, for use only on Compaq Presario X6000 notebook models (includes TouchPad) |
| 374753-001 | Base enclosure |
| 374755-001 | Switch cover, for use only on Compaq Presario X6000 models with wireless |
| 374758-001 | Modem board |
| 374759-001 | Digital drive board (includes cable) |
| 374761-001 | Audio/USB board |
| 376650-001 | Mini PCI communications card, 802.11a/b/g combination card, for use in the United States |
| 376651-001 | Broadcomm Bluetooth wireless card (includes cable) |
| 377208-001 | System board, M22P with 64 MB RAM, for use on HP Compaq nx9600 models (includes disk cell RTC battery) |
| 377209-001 | System board, M24P with 128 MB RAM, for use on HP Compaq nx9600 models (includes disk cell RTC battery) |
| 377213-001 | Processor, Intel Pentium 4 560 (3.6-GHz, includes thermal pad) |
| 377215-001 | Display assembly, 17.0-inch, WXGA+, for use only on Compaq Presario X6000 notebook models (includes wireless antenna boards and cables) |
| 377216-001 | Display assembly, 17.0-inch, WXGA+ with Brightview, for use only on Compaq Presario X6000 notebook models (includes wireless antenna boards and cables) |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 377217-001 | Display assembly, 17.0-inch, WSXGA+ with Brightview, for use only on Compaq Presario X6000 notebook models (includes wireless antenna boards and cables) |
| 377218-001 | Display assembly, 17.0-inch, WSXGA+, for use only on HP Compaq nx9600 models (includes wireless antenna boards and cables) |
| 377219-001 | Display assembly, 17.0-inch, WSXGA+ with Brightview, for use only on HP Compaq nx9600 models (includes wireless antenna boards and cables) |
| 378518-001 | 24X DVD/CD-RW Combo Drive, for use only on HP Compaq Presario nx9600 models |
| 378519-001 | 8X DVD±RW/R and CD-RW Combo Drive, for use only on HP Compaq Presario nx9600 models |
| 378520-001 | Keyboard, for use only on HP Compaq nx9600 models United States |
| 378520-121 | Keyboard, for use only on HP Compaq nx9600 models French Canada |
| 378520-161 | Keyboard, for use only on HP Compaq nx9600 models Latin America |
| 378520-201 | Keyboard, for use only on HP Compaq nx9600 models Brazil |
| 378522-001 | Speakers, left and right |
| 378733-001 | Switch cover, for use only on HP Compaq nx9600 models with wireless |
| 378767-001 | Hard drive, 4200-rpm, 40-GB, (includes frame) |

**Table 3-5**

**Sequential Part Number Listing *(Continued)***

| Spare Part Number | Description |
|---|---|
| 378768-001 | AC adapter, 135 watt, 2-wire plug, used with 373979-xxx power cords – for use only on models with Intel Pentium 4 530 (3.0-GHz) and Intel Pentium 4 520 (2.8-GHz) processors |
| 378769-001 | Logo Kit, for use only on HP Compaq nx9600 models |
| 378770-001 | Top cover, for use only on HP Compaq nx9600 notebook models (includes TouchPad) |
| 378772-001 | LED Board (includes cable) |
| 378774-001 | Front panel LED board (includes cable) |
| 380028-001 | Base enclosure large fan |
| 380029-001 | Base enclosure small fan |
| 380031-001 | Heat sink module (includes fan and thermal paste) |
| 380258-001 | Hard drive, 5400-rpm, 100-GB, (includes frame) |
| 380443-001 | Battery pack, 12-cell, 2.2-AHr |
| 380445-001 | Switch cover, for use only on Compaq Presario X6000 models without wireless |
| 380446-001 | Switch cover, for use only on HP Compaq nx9600 models with wireless |
| 382080-001 | Dual Format, Double Layer optical drive, for use only on Compaq Presario X6000 notebook models |
| 383609-001 | 8X Dual Format, Light Scribe, for use only on Compaq Presario X6000 notebook models |
| 383610-001 | 8X Dual Format, Light Scribe optical drive, for use only on HP Compaq nx9600 models |
| 433822-001 | Audio/USB board cable |

# 4

# Removal and Replacement Preliminaries

This chapter provides essential information for proper and safe removal and replacement service.

## 4.1 Tools Required

You will need the following tools to complete the removal and replacement procedures:

- Magnetic screwdriver
- Phillips P0 screwdriver
- 5.0-mm socket for system board screwlocks
- Flat-bladed screwdriver
- Tool kit—includes connector removal tool, loopback plugs, and case utility tool

# 4.2 Service Considerations

The following sections include some of the considerations that you should keep in mind during disassembly and assembly procedures.

As you remove each subassembly from the notebook, place the subassembly (and all accompanying screws) away from the work area to prevent damage.

## Plastic Parts

Using excessive force during disassembly and reassembly can damage plastic parts. Use care when handling the plastic parts. Apply pressure only at the points designated in the maintenance instructions.

## Cables and Connectors

**CAUTION:** When servicing the notebook, ensure that cables are placed in their proper locations during the reassembly process. Improper cable placement can damage the notebook.

Cables must be handled with extreme care to avoid damage. Apply only the tension required to unseat or seat the cables during removal and insertion. Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. Ensure that cables are routed in such a way that they cannot be caught or snagged by parts being removed or replaced. Handle flex cables with extreme care; these cables tear easily.

# 4.3 Preventing Damage to Removable Drives

Removable drives are fragile components that must be handled with care. To prevent damage to the notebook, damage to a removable drive, or loss of information, observe the following precautions:

- Before removing or inserting a hard drive, shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the notebook on, and then shut it down through the operating system.
- Before removing a diskette drive or optical drive, ensure that a diskette or disc is not in the drive and ensure that the optical drive tray is closed.
- Before handling a drive, ensure that you are discharged of static electricity. While handling a drive, avoid touching the connector.
- Handle drives on surfaces covered with at least one inch of shock-proof foam.
- Avoid dropping drives from any height onto any surface.
- After removing a hard drive, an optical drive, or a diskette drive, place it in a static-proof bag.
- Avoid exposing a hard drive to products that have magnetic fields, such as monitors or speakers.
- Avoid exposing a drive to temperature extremes or liquids.
- If a drive must be mailed, place the drive in a bubble pack mailer or other suitable form of protective packaging and label the package “FRAGILE: Handle With Care.”

# 4.4 Preventing Electrostatic Damage

Many electronic components are sensitive to electrostatic discharge (ESD). Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases, the discharge contains enough power to alter device parameters or melt silicon junctions.

A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry. Often the spark is neither felt nor heard, but damage occurs.

An electronic device exposed to electrostatic discharge might not be affected at all and can work perfectly throughout a normal cycle. Or the device might function normally for a while, then degrade in the internal layers, reducing its life expectancy.

# 4.5 Packaging and Transporting Precautions

Use the following grounding precautions when packaging and transporting equipment:

- To avoid hand contact, transport products in static-safe containers, such as tubes, bags, or boxes.
- Protect all electrostatic-sensitive parts and assemblies with conductive or approved containers or packaging.
- Keep electrostatic-sensitive parts in their containers until the parts arrive at static-free workstations.
- Place items on a grounded surface before removing items from their containers.
- Always be properly grounded when touching a sensitive component or assembly.
- Store reusable electrostatic-sensitive parts from assemblies in protective packaging or nonconductive foam.
- Use transporters and conveyors made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground and that proper materials are selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges.

# 4.6 Workstation Precautions

Use the following grounding precautions at workstations:

- Cover the workstation with approved static-shielding material (refer to Table 4-2, "Static-Shielding Materials").
- Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.
- Use conductive field service tools, such as cutters, screwdrivers, and vacuums.
- When fixtures must directly contact dissipative surfaces, use fixtures made only of static-safe materials.
- Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam.
- Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.
- Avoid contact with pins, leads, or circuitry.
- Turn off power and input signals before inserting or removing connectors or test equipment.

# 4.7 Grounding Equipment and Methods

Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation.

- When seated, wear a wrist strap connected to a grounded system. Wrist straps are flexible straps with a minimum of one megohm ±10% resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, use alligator clips to connect a wrist strap.
- When standing, use foot straps and a grounded floor mat. Foot straps (heel, toe, or boot straps) can be used at standing workstations and are compatible with most types of shoes or boots. On conductive floors or dissipative floor mats, use foot straps on both feet with a minimum of one megohm resistance between the operator and ground. To be effective, the conductive strips must be worn in contact with the skin.

Other grounding equipment recommended for use in preventing electrostatic damage includes

- Antistatic tape.
- Antistatic smocks, aprons, and sleeve protectors.
- Conductive bins and other assembly or soldering aids.
- Nonconductive foam.
- Conductive tabletop workstations with ground cords of one megohm resistance.
- Static-dissipative tables or floor mats with hard ties to the ground.
- Field service kits.
- Static awareness labels.
- Material-handling packages.
- Nonconductive plastic bags, tubes, or boxes.
- Metal tote boxes.
- Electrostatic voltage levels and protective materials.

Table 4-1 shows how humidity affects the electrostatic voltage levels generated by different activities.

**Table 4-1**

**Typical Electrostatic Voltage Levels**

| | Relative Humidity | | |
|---|---|---|---|
| **Event** | **10%** | **40%** | **55%** |
| Walking across carpet | 35,000 V | 15,000 V | 7,500 V |
| Walking across vinyl floor | 12,000 V | 5,000 V | 3,000 V |
| Motions of bench worker | 6,000 V | 800 V | 400 V |
| Removing DIPS from plastic tube | 2,000 V | 700 V | 400 V |
| Removing DIPS from vinyl tray | 11,500 V | 4,000 V | 2,000 V |
| Removing DIPS from Styrofoam | 14,500 V | 5,000 V | 3,500 V |
| Removing bubble pack from PCB | 26,500 V | 20,000 V | 7,000 V |
| Packing PCBs in foam-lined box | 21,000 V | 11,000 V | 5,000 V |

✎ A product can be degraded by as little as 700 V.

Table 4-2 lists the shielding protection provided by antistatic bags and floor mats.

**Table 4-2**

**Static-Shielding Materials**

| Material | Use | Voltage Protection Level |
|---|---|---|
| Antistatic plastic | Bags | 1,500 V |
| Carbon-loaded plastic | Floor mats | 7,500 V |
| Metallized laminate | Floor mats | 5,000 V |

# 5

# Removal and Replacement Procedures

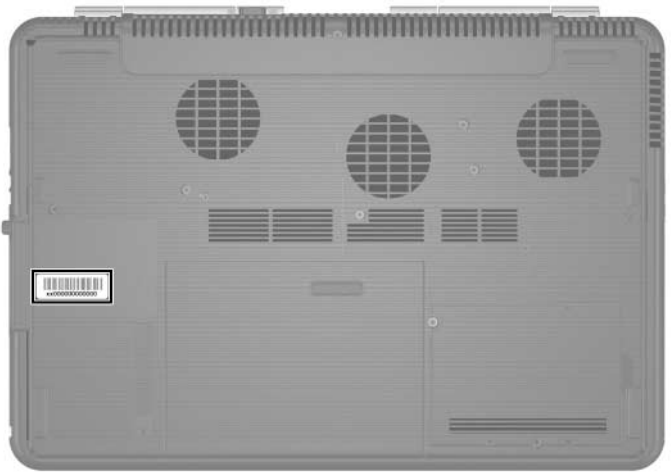
This chapter provides removal and replacement procedures.

There are 78 screws and screw locks, in 11 different sizes, that must be removed, replaced, or loosened when servicing the notebook. Make special note of each screw size and location during removal and replacement.

Refer to Appendix C, "Screw Listing." for detailed information on screw sizes, locations, and usage.

# 5.1 Serial Number

Report the notebook serial number to HP when requesting information or ordering spare parts. The serial number is located on the bottom of the notebook.



*Serial Number Location*

# 5.2 Disassembly Sequence Chart

Use the chart below to determine the section number to be referenced when removing notebook components.

**Disassembly Sequence Chart**

| Section | Description | # of Screws Removed |
|---|---|---|
| 5.3 | Preparing the notebook for disassembly | |
| | Battery pack | 0 |
| | Hard drive | 4 to remove hard drive cover<br>0 to remove hard drive<br>4 to disassemble hard drive |
| 5.4 | Notebook feet | 0 |
| 5.5 | Optical drive | 1 |
| 5.6 | Memory module | 1 loosened |
| 5.7 | Mini PCI communications card | 4 to remove hard drive cover |
| | ⚠ To prevent an unresponsive system and the display of a warning message, install only a Mini PCI device authorized for use in your notebook by the governmental agency that regulates wireless devices in your country. If you install a device and then receive a warning message, remove the device to restore notebook functionality. Then contact Customer Care. | |
| 5.8 | Switch cover | 3 |

**Disassembly Sequence Chart *(Continued)***

| Section | Description | # of Screws Removed |
|---|---|---|
| 5.9 | LED board | 3 |
| 5.10 | Keyboard | 2 |
| 5.11 | Display assembly | 8 |
| 5.12 | Top cover | 15 |
| 5.13 | Front panel LED board | 0 |
| 5.14 | Audio/USB board | 2 |
| 5.15 | Bluetooth board | 0 |
| 5.16 | System board | Compaq Presario X6000 models:<br>2 screw locks and 13 screws<br>HP Compaq nx9600 models:<br>2 screw locks and 7 screws |
| 5.17 | Digital drive board | 2 |
| 5.18 | Speakers | 2 on left speaker<br>2 on right speaker |
| 5.19 | Base enclosure fans | 2 on left fan<br>3 on right fan |
| 5.20 | Modem board | 1 |
| 5.21 | Heat sink module | 4 |
| 5.22 | Processor | 0 |

# 5.3 Preparing the Notebook for Disassembly

Before you begin any removal or installation procedures:

1. Shut down the notebook. If you are unsure whether the notebook is off or in hibernation, turn the computer on, and then shut it down through the operating system.
2. Disconnect all external devices connected to the notebook.
3. Disconnect the power cord.

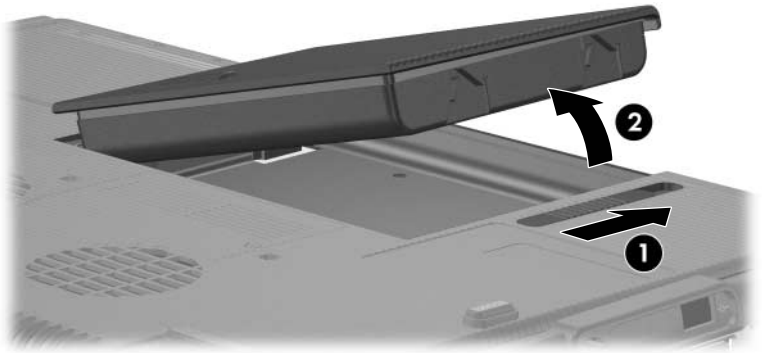
| Battery Pack Spare Part Number Information | |
|---|---|
| Battery pack, 12-cell, 2.2-AHr | 380443-001 |

4. Remove the battery pack by following these steps:
   a. Turn the notebook upside down with the right side toward you.

b. Slide and hold the battery release latch ❶ toward the front of the notebook. (The left edge of the battery pack disengages from the notebook.)

c. Lift the right edge of the battery pack up and swing it to the left ❷.

d. Remove the battery pack.

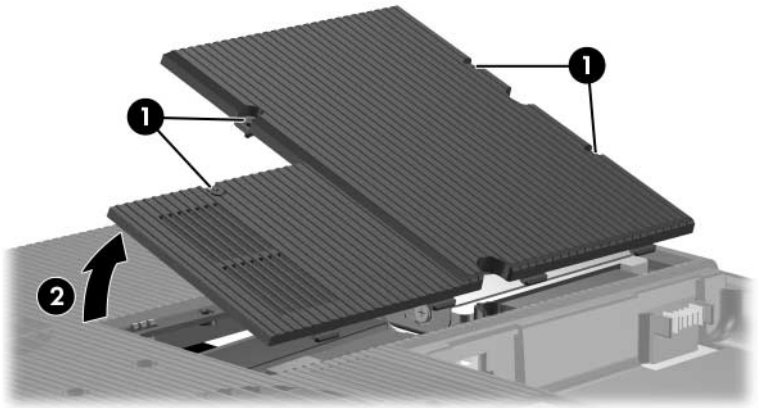



*Removing the Battery Pack*

Reverse the above procedure to install the battery pack.

5. Remove the hard drive by following these steps:
   a. Loosen the four PM2.0×5.0 screws ❶ that secure the hard drive cover to the notebook.
   b. Remove the hard drive cover ❷.

The hard drive cover is included in the Miscellaneous Plastics Kit, spare part number 374747-001.

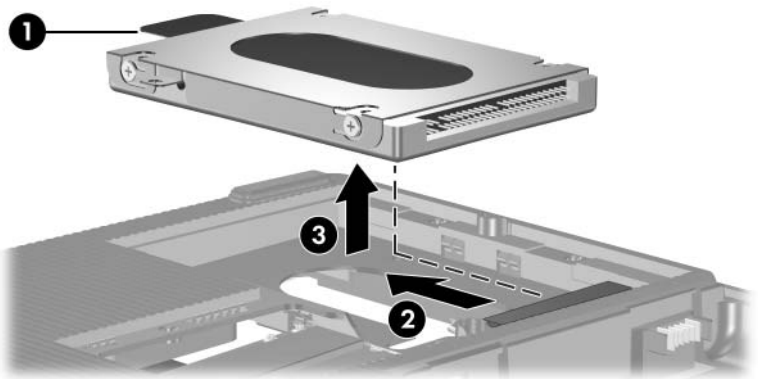



*Removing the Hard Drive Cover*

| Hard Drive Spare Part Number Information | |
|---|---|
| 7200-rpm | |
| 60-GB | 374732-001 |
| 5400-rpm | |
| 100-GB | 380258-001 |
| 80-GB | 374731-001 |
| 4200-rpm | |
| 100-GB | 374730-001 |
| 80-GB | 374729-001 |
| 60-GB | 374728-001 |
| 40-GB | 378767-001 |

c. Grasp the mylar tab ❶ on the left side of the hard drive and slide the hard drive to the left ❷ to disconnect it from the system board.

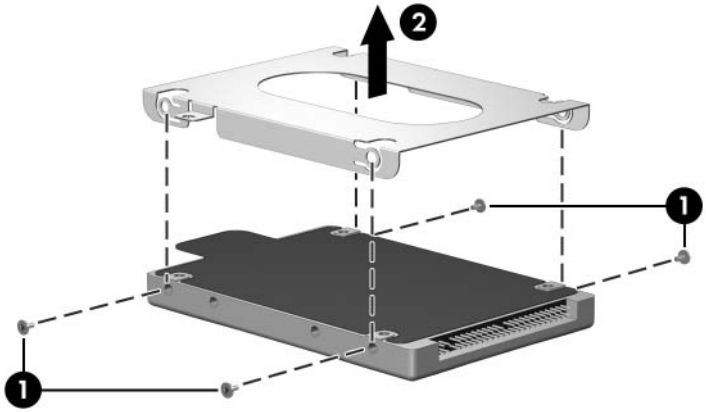
d. Remove the hard drive ❸.




*Removing the Hard Drive*

e. Remove the four PM2.5×4.0 screws ❶ that secure the hard drive frame to the hard drive.

f. Lift the frame straight up ❷ to remove if from the hard drive.

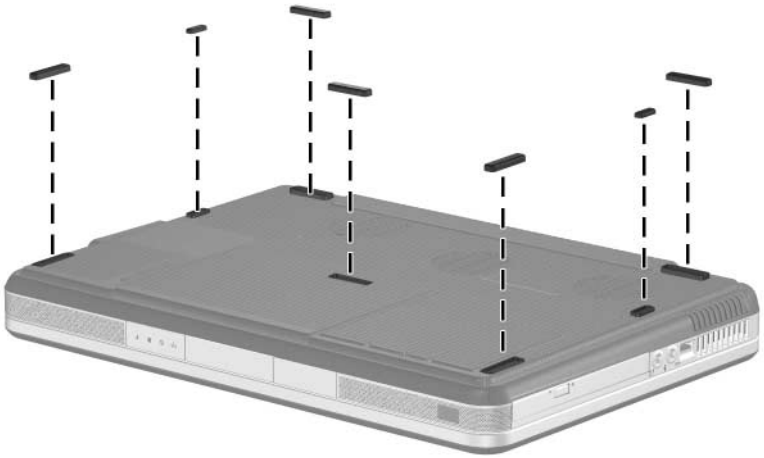



*Removing the Hard Drive Frame and Connector*

Reverse the above procedure to install and reassemble the hard drive.

# 5.4 Notebook Feet

The notebook feet are adhesive-backed rubber pads. The feet are included in the Miscellaneous Plastics Kit, spare part number 374747-001.



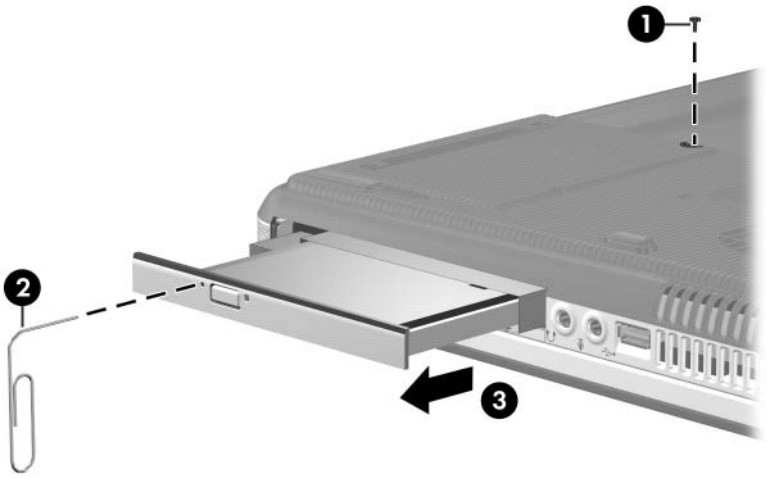
*Replacing the Notebook Feet*

# 5.5 Optical Drive

| Spare Part Number Information | |
|---|---|
| For use only on Compaq Presario X6000 notebook models | |
| 8X DVD±RW/R and CD-RW Combo Drive | 374738-001 |
| 24X DVD/CD-RW Combo Drive | 374736-001 |
| Dual Format, Double Layer | 382080-001 |
| 8X Dual Format, Light Scribe | 383609-001 |
| For use only on HP Compaq nx9600 models | |
| 8X DVD±RW/R and CD-RW Combo Drive | 378519-001 |
| 24X DVD/CD-RW Combo Drive | 378518-001 |
| 8X Dual Format, Light Scribe | 383610-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3).

2. Remove the PM2.0×8.0 screw ❶ that secures the optical drive to the notebook.
3. Insert a thin tool, such as a paper clip, into the media tray release hole ❷. (The optical drive media tray releases from the optical drive.)
4. Use the media tray frame to slide the optical drive outward ❸.
5. Remove the optical drive.




*Removing the Optical Drive*

Reverse the above procedure to install an optical drive.

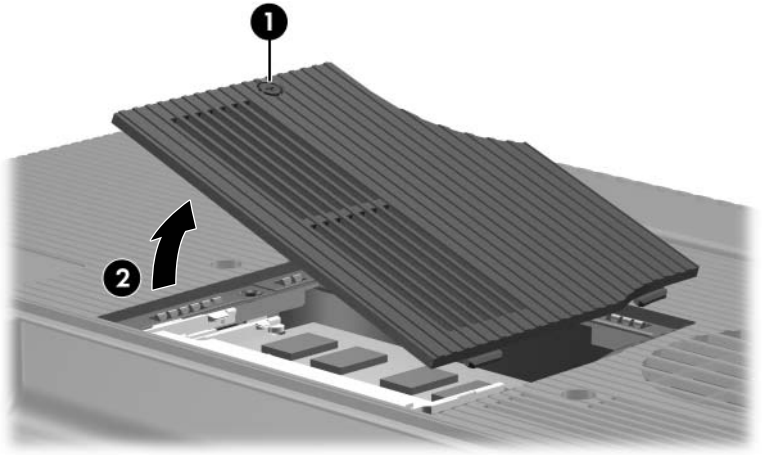
# 5.6 Memory Module

| Spare Part Number Information | |
|---|---|
| 1024-MB | 374726-001 |
| 512-MB | 374725-001 |
| 256-MB | 374724-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3).

2. Loosen the PM2.0×5.0 screw ❶ that secures the memory module compartment cover to the notebook.
3. Lift the left edge of the cover up and swing it to the right ❷.
4. Remove the memory module compartment cover.

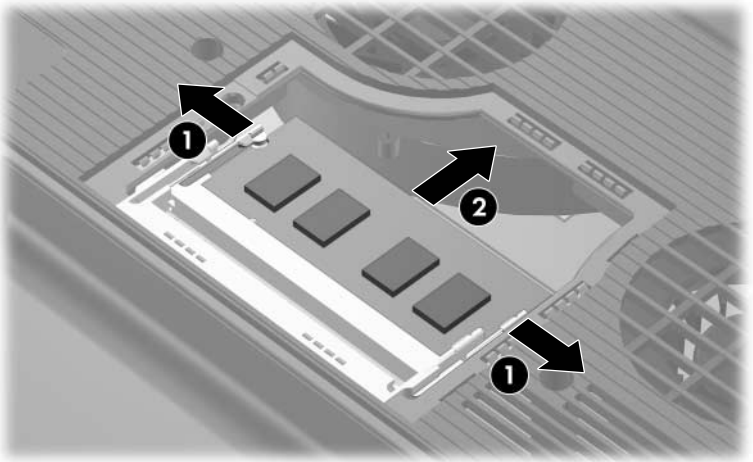
The memory module compartment cover is included in the Miscellaneous Plastics Kit, spare part number 374747-001.




*Removing the Memory Module Compartment Cover*

5. Spread the retaining tabs ❶ on each side of the memory module socket to release the memory module board. (The back edge side of the board rises away from the notebook.)
6. Slide the module away from the socket at an angle ❷.
7. Remove the memory module board.

Note that memory modules are slotted to prevent incorrect installation into the memory module socket.




*Removing the Memory Module*

Reverse the above procedure to install a memory module.

# 5.7 Mini PCI Communications Card

| Spare Part Number Information | |
|---|---|
| 802.11b/g, for use in most of the world (MOW) | 373047-001 |
| 802.11b/g, for use in the rest of the world (ROW) | 373048-001 |
| 802.11a/b/g combination card, for use in the United States | 376650-001 |

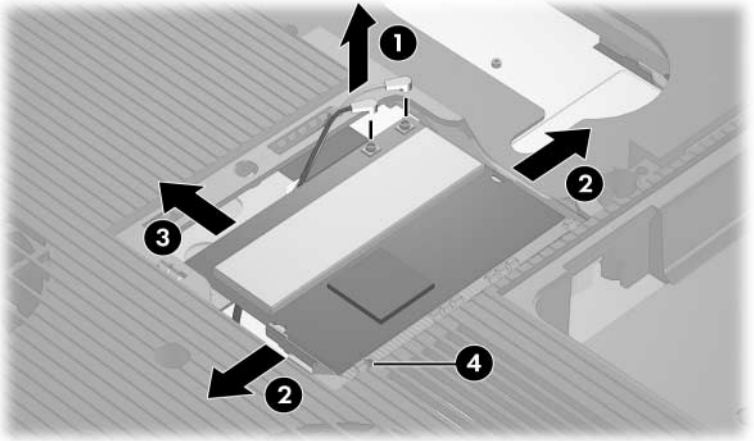
1. Prepare the notebook for disassembly (refer to Section 5.3).
2. Remove the hard drive cover (refer to Section 5.3).

3. Disconnect the auxiliary and main ❶ antenna cables from the Mini PCI communications card.

Make note of which wireless antenna cable is attached to which antenna clip on the Mini PCI communications card before disconnecting the cables.

4. Spread the retaining tabs ❷ on each side of the Mini PCI socket to release the Mini PCI card. (The right edge of the card rises away from the notebook.)
5. Remove the wireless communications card by pulling the board away from the socket at a 45-degree angle ❸.

Note that the Mini PCI communications card is slotted ❹ to prevent incorrect installation.



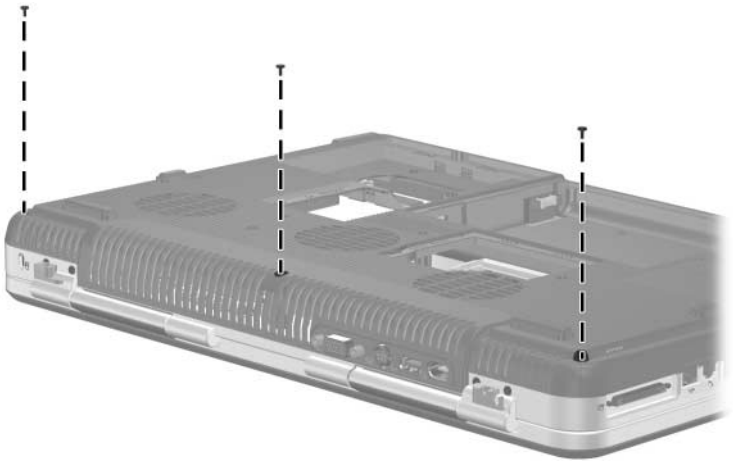

*Removing a Mini PCI Communications Card*

Reverse the above procedure to install a Mini PCI communications card.

# 5.8 Switch Cover

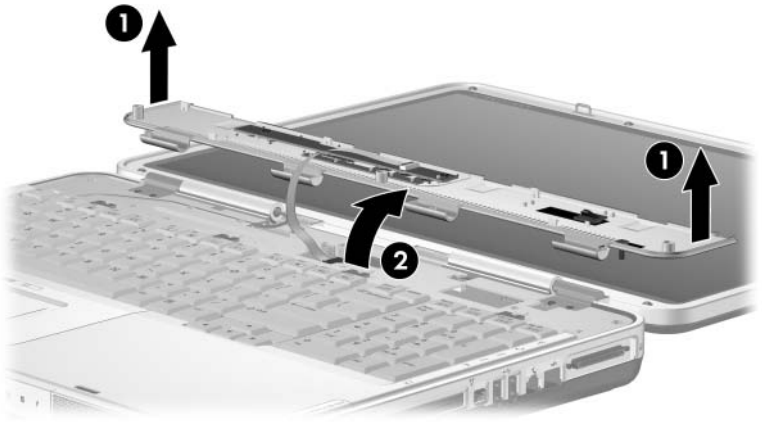
| Spare Part Number Information | |
|---|---|
| For use only on Compaq Presario X6000 models with wireless | 374755-001 |
| For use only on Compaq Presario X6000 models without wireless | 380445-001 |
| For use only on HP Compaq nx9600 models with wireless | 378733-001 |
| For use only on HP Compaq nx9600 models without wireless | 380446-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3).
2. Position the notebook with the rear panel toward you.
3. Remove the three PM2.0×8.0 screws from the bottom of the notebook that secure the switch cover to the notebook.



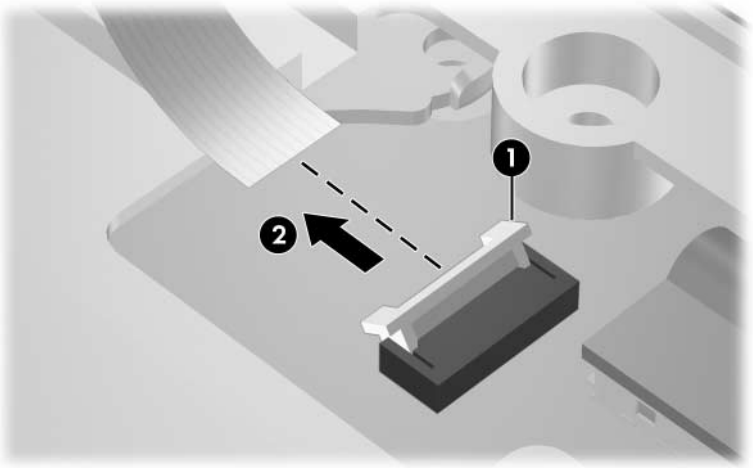
*Removing the Switch Cover Screws*

4. Turn the notebook display-side up with the front panel toward you.
5. Open the notebook as far as possible.
6. Lift up the left and right sides of the switch cover ❶ to detach it from the notebook.
7. Lift the front edge of the switch cover and swing it back until it rests on the display bezel ❷.




*Releasing the Switch Cover*

8. Release the zero insertion force (ZIF) connector ❶ to which the LED board cable is attached and disconnect the cable ❷ from the system board.




*Disconnecting the LED Cable*

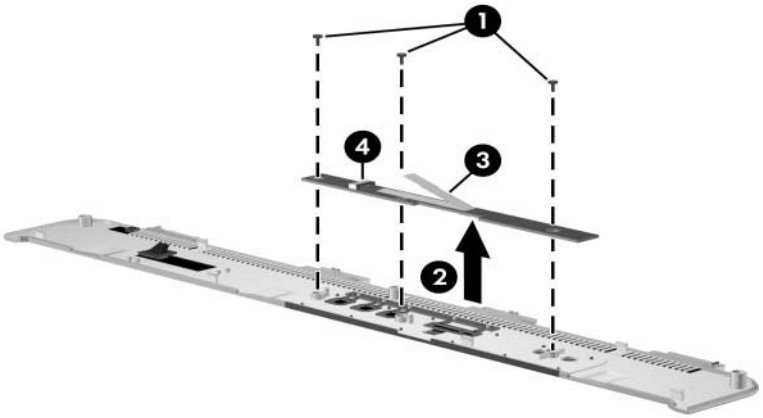
9. Remove the switch cover.

Reverse the above procedure to install the switch cover.

# 5.9 LED Board

| Spare Part Number Information | |
|---|---|
| LED board (includes cable) | 378772-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3).
2. Remove the switch cover (refer to Section 5.8).
3. Remove the three PM2.0×3.0 screws ❶ that secure the LED board to the switch cover.
4. Remove the LED board ❷.
5. Release the ZIF connector ❸ to which the LED board cable is connected and disconnect the cable ❹.



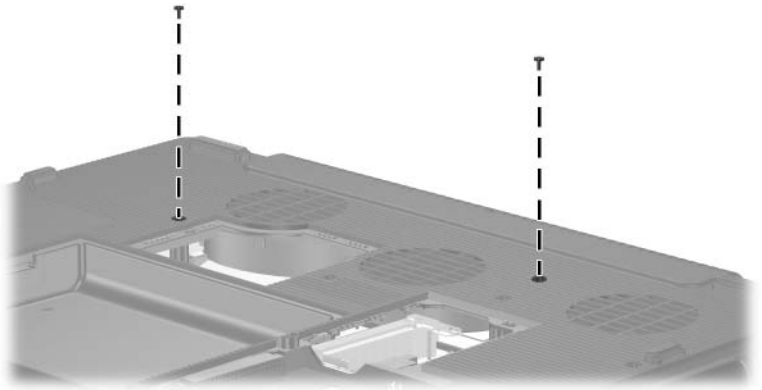

*Removing the LED Board*

Reverse the above procedure to install the LED board.

# 5.10 Keyboard

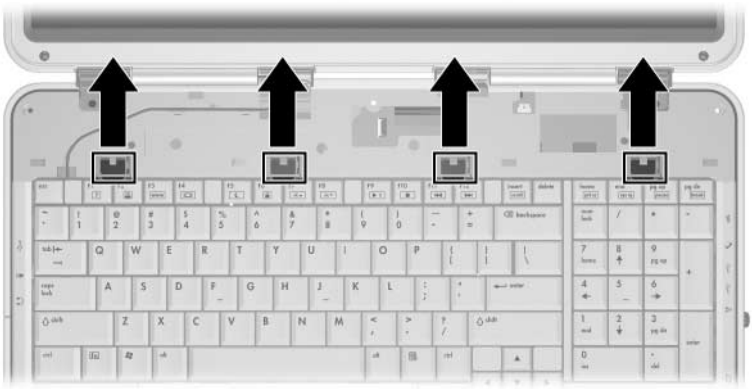
| Spare Part Number Information | | | |
|---|---|---|---|
| For use only on Compaq Presario X6000 models in the United States | | | 374742-001 |
| For use only on HP Compaq nx9600 models | | | |
| Brazil | 378520-201 | Latin America | 378520-161 |
| French Canada | 378520-121 | United States | 378520-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3).
2. Remove the switch cover (refer to Section 5.8).
3. Turn the notebook upside down with the front panel toward you.
4. Remove the two PM2.0×8.0 screws that secure the keyboard to the notebook.



*Removing the Keyboard Screws*

5. Turn the notebook display-side up with the front panel toward you.
6. Open the notebook as far as possible.
7. Use a flat-bladed tool to push back the four keyboard retention tabs. The tabs are located above the **f1** and **f2** keys, above the **f6** and **f7** keys, above the **f11** and **f12** keys, and above the **end** and **pg up** keys.

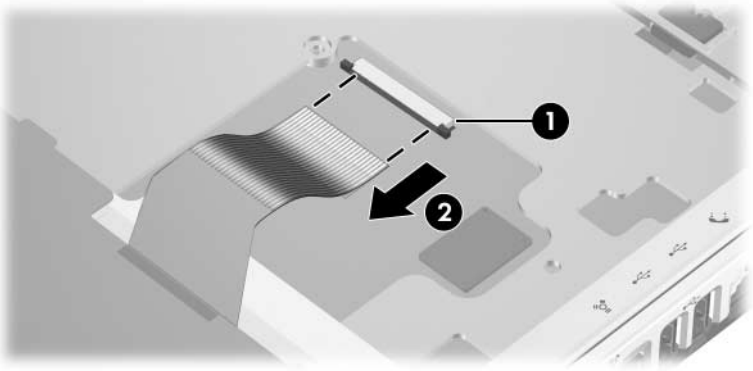


*Releasing the Keyboard, Part 1*

8. Lift the rear edge of the keyboard and swing it forward until it rests on the palm rest.

*Releasing the Keyboard, Part 2*

9. Release the zero insertion force (ZIF) connector ❶ to which the keyboard cable is connected and disconnect the keyboard cable ❷ from the system board.
10. Remove the keyboard.




*Disconnecting the the Keyboard Cable*

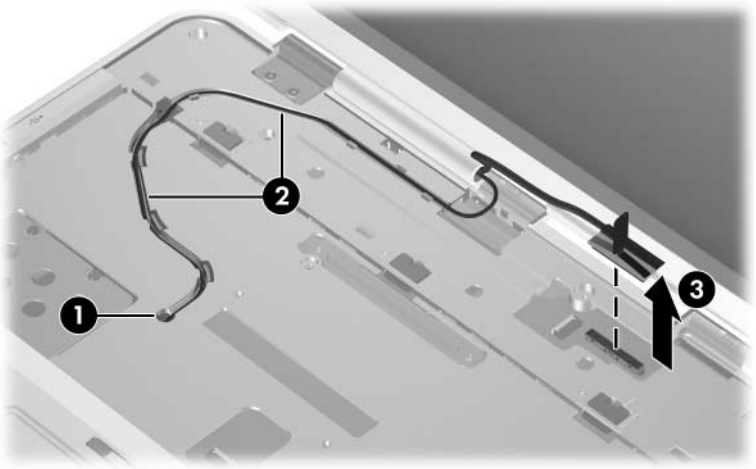
Reverse the above procedure to install the keyboard.

# 5.11 Display Assembly

| Spare Part Number Information | |
|---|---|
| For use only on Compaq Presario X6000 notebook models (includes wireless antenna boards and cables) | |
| 17.0-inch, WSXGA+ with Brightview | 377217-001 |
| 17.0-inch, WXGA+ with Brightview | 377216-001 |
| 17.0-inch, WXGA+ | 377215-001 |
| For use only on HP Compaq nx9600 models (includes wireless antenna boards and cables) | |
| 17.0-inch, WSXGA+ with Brightview | 377219-001 |
| 17.0-inch, WSXGA+ | 377218-001 |

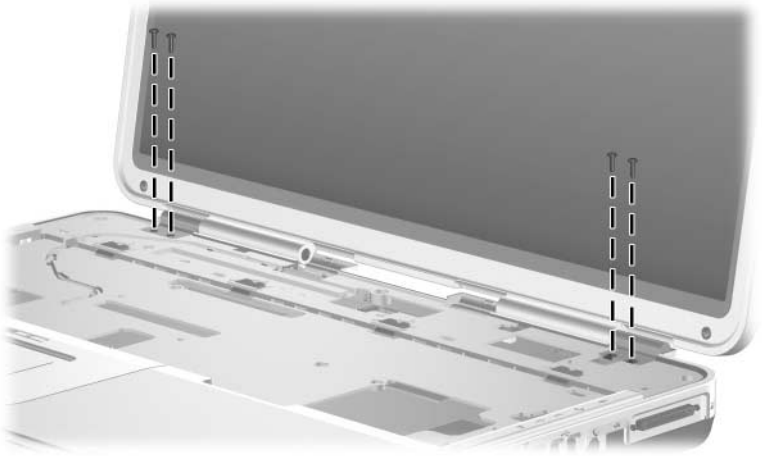
1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)

2. Remove the wireless antenna cables from the top cover hole ❶ and from the routing channels ❷ through which the cables are routed.
3. Disconnect the display cable ❸ from the system board.




*Disconnecting the Display Cables*

4. Remove the four PM2.0×8.0 screws that secure the display assembly to the notebook.

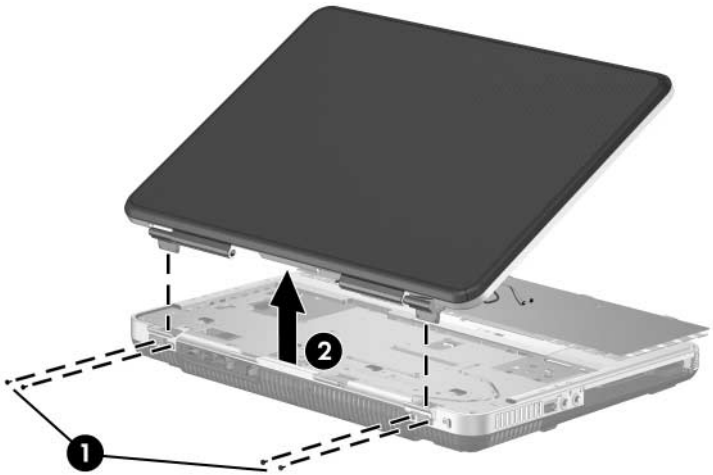


*Removing the Display Screws*

5. Position the notebook with the rear panel toward you.

**CAUTION:** Support the display assembly when removing the following screws. Failure to support the display assembly can result in damage to the display assembly and other notebook components.

6. Remove the four PM2.0×8.0 screws ❶ that secure the display assembly to the notebook.
7. Lift the display assembly straight up to remove it ❷.




*Removing the Display Assembly*

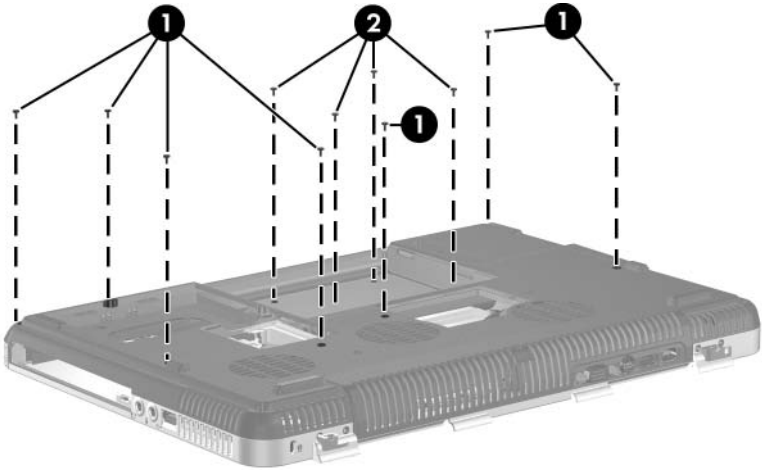
Reverse the above procedure to install the display assembly.

# 5.12 Top Cover

| Spare Part Number Information | |
|---|---|
| Top covers (include TouchPad) | |
| For use only on Compaq Presario X6000 notebook models | 374751-001 |
| For use only on HP Compaq nx9600 models | 378770-001 |

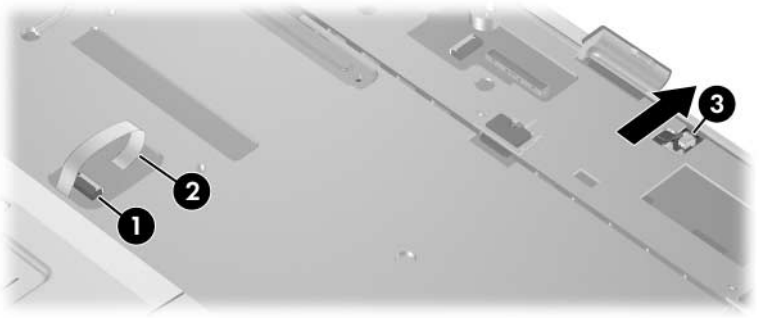
1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
2. Turn the notebook upside down with the front panel toward you.

3. Remove the seven PM2.0×8.0 screws ❶ on the surface of the base enclosure and the four PM2.0×8.0 screws ❷ in the battery bay.



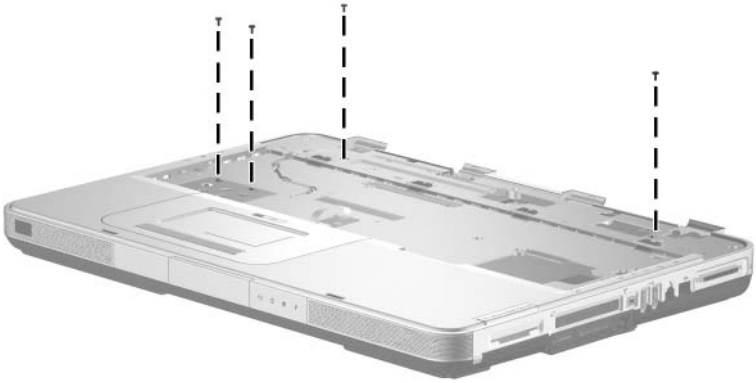

*Removing the Top Cover Screws*

4. Turn the notebook top-side up with the front panel toward you.
5. Release the ZIF connector ❶ to which the TouchPad cable is connected and disconnect the TouchPad cable ❷ from the system board.
6. Disconnect the display switch module cable ❸ from the system board.



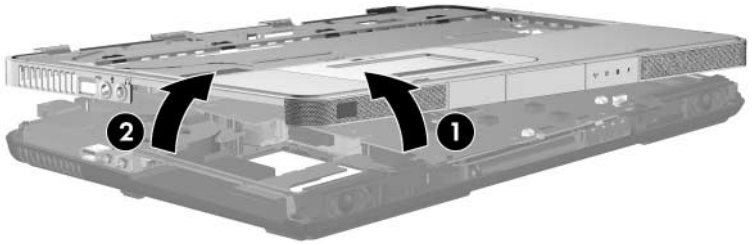

*Disconnecting the TouchPad and Display Lid Switch Cables*

7. Remove the four PM2.0×8.0 screws that secure the base enclosure to the notebook.



*Removing the Top Cover Screw*

8. Lift the right side of the top cover up and to the left ❶ until it detaches from the notebook.
9. Lift the top cover straight up ❷ to remove it.




*Removing the Top Cover*

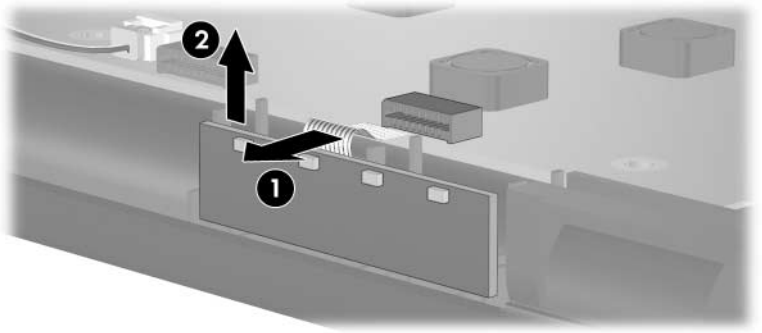
Reverse the above procedure to install the top cover.

# 5.13 Front Panel LED Board

| Spare Part Number Information | |
|---|---|
| Front panel LED board (includes cable) | 378774-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)

2. Disconnect the front panel LED board cable ❶ from the low insertion force (LIF) connector on the system board.
3. Remove the front panel LED board ❷ from the clip in the base enclosure.




*Removing the Front Panel LED Board*

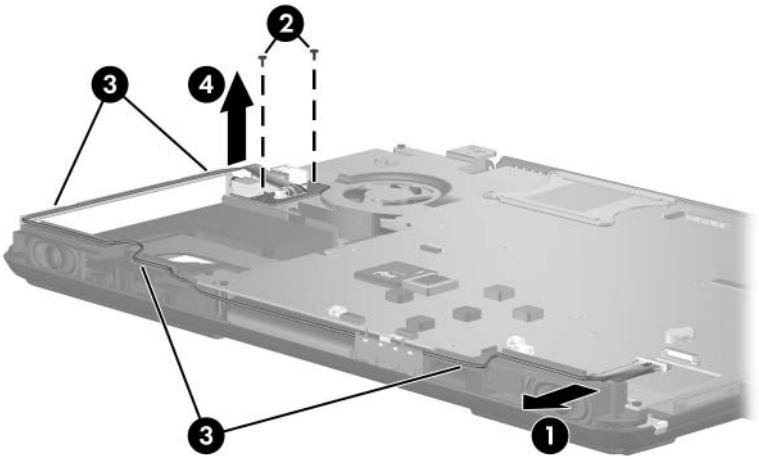
Reverse the above procedure to install the front panel LED board.

# 5.14 Audio/USB Board

| Spare Part Number Information | |
|---|---|
| Audio/USB board | 374761-001 |
| Audio/USB board cable | 433822-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. Front panel LED board (refer to Section 5.13)

2. Disconnect the audio/USB board cable ❶ from the system board.
3. Remove the two PM2.0×8.0 screws ❷ that secure the audio/USB board to the base enclosure.
4. Remove the audio/USB board cable from the base enclosure clips ❸ through which it is routed.
5. Remove the audio/USB board ❹.




*Removing the Audio/USB Board*

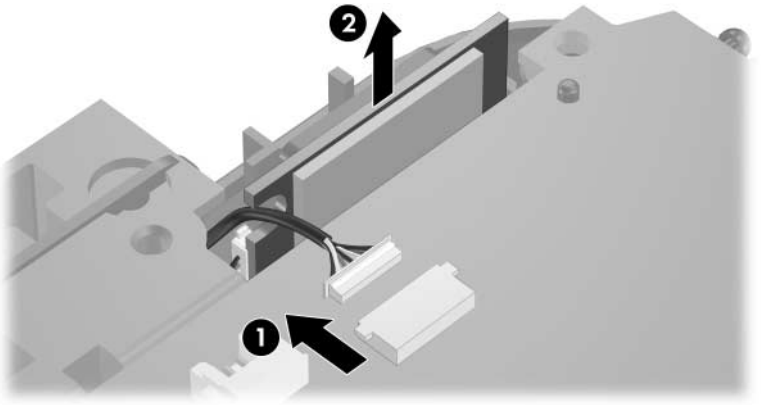
Reverse the above procedure to install the audio/USB board.

# 5.15 Bluetooth Board

| Spare Part Number Information | |
|---|---|
| Broadcomm Bluetooth wireless card (includes cable) | 376651-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)

2. Disconnect the Bluetooth board cable ❶ from the system board.
3. Remove the Bluetooth board ❹.




*Removing the Bluetooth Board*

Reverse the above procedure to install the Bluetooth board.

# 5.16 System Board

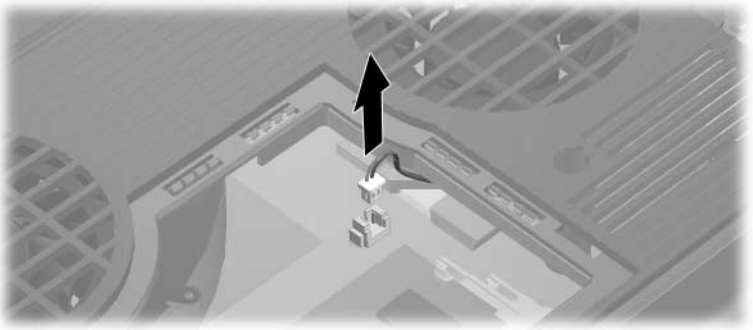
| Spare Part Number Information | |
|---|---|
| For use on Compaq Presario X6000 models (includes PC Card cage and expansion port bracket | |
| M24P with 256 MB RAM | 374711-001 |
| M24P with 128 MB RAM | 374709-001 |
| M22P with 64 MB RAM | 374707-001 |
| For use on HP Compaq nx9600 models | |
| M24P with 128 MB RAM | 377209-001 |
| M22P with 64 MB RAM | 377208-001 |

All system board spares kits include a disk cell RTC battery.

When replacing the system board, ensure that the following components are removed from the defective system board and installed on the replacement system board:

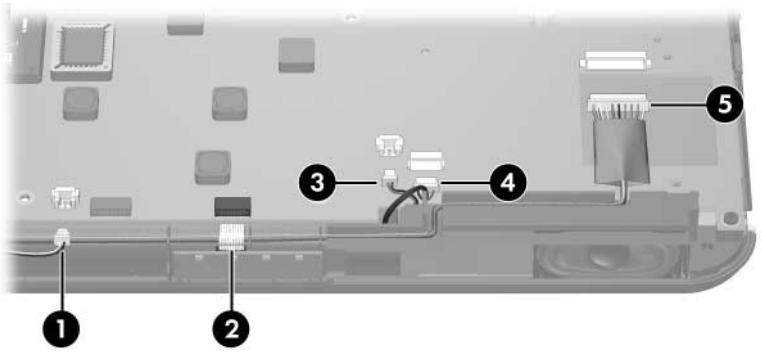
- Memory modules (refer to Section 5.6)
- Mini PCI communications card (refer to Section 5.7)
- Bluetooth board (refer to Section 5.15)
- Modem board (refer to Section 5.20)
- Heat sink module (refer to Section 5.21)
- Processor (refer to Section 5.22)

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Switch cover (refer to Section 5.8)
   c. Keyboard (refer to Section 5.10)
   d. Display assembly (refer to Section 5.11)
   e. Top cover (refer to Section 5.12)
2. Turn the notebook upside down with the front toward you.
3. Disconnect the fan cable from the system board through the memory module compartment.



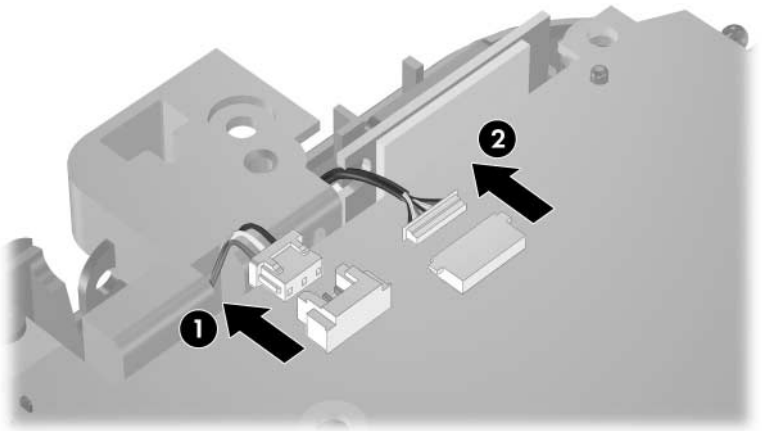
*Disconnecting the Fan Cable*

4. Turn the notebook top-side up with the front panel toward you.
5. Disconnect the following cables from the system board:
   - ❶ Left speaker cable
   - ❷ Front panel LED board cable
   - ❸ Digital drive board cable
   - ❹ Right speaker cable
   - ❺ Audio/USB board cable



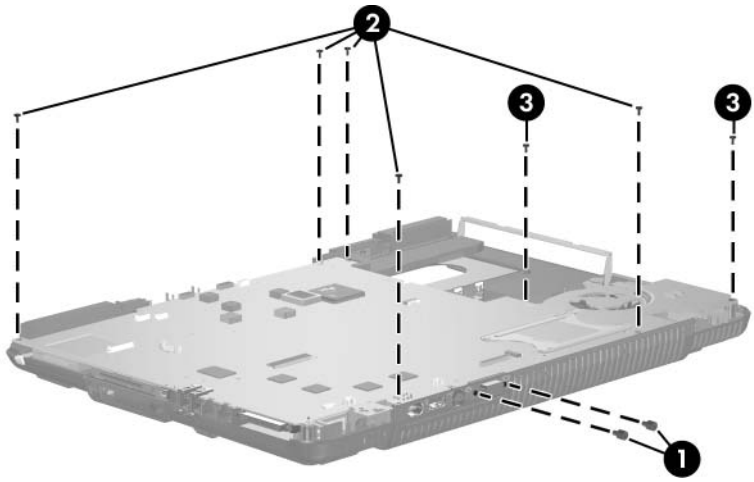

*Disconnecting the System Board Cables, Part 1*

6. Disconnect the fan cable ❶ and the Bluetooth board cable ❷ from the system board.



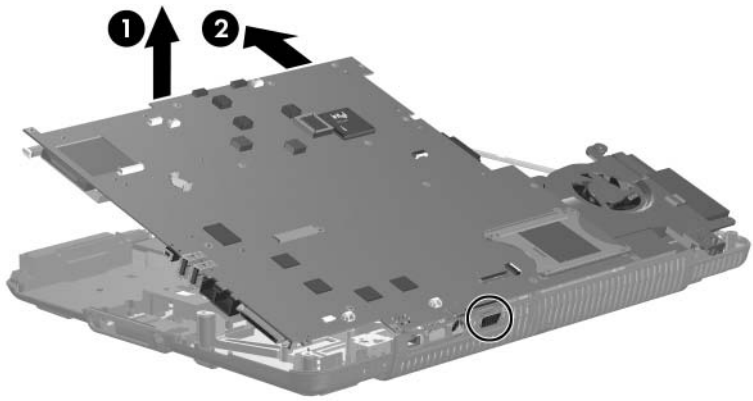

*Disconnecting the System Board Cables, Part 2*

7. Position the notebook with the rear panel toward you.
8. Remove the following:
   - ❶ two HM5.0×9.0 screw locks on each side of the external monitor connector
   - ❷ five PM2.0×8.0 screws that secure the system board to the base enclosure
   - ❸ two PM2.0×8.0 screws that secure the heat sink module to the base enclosure



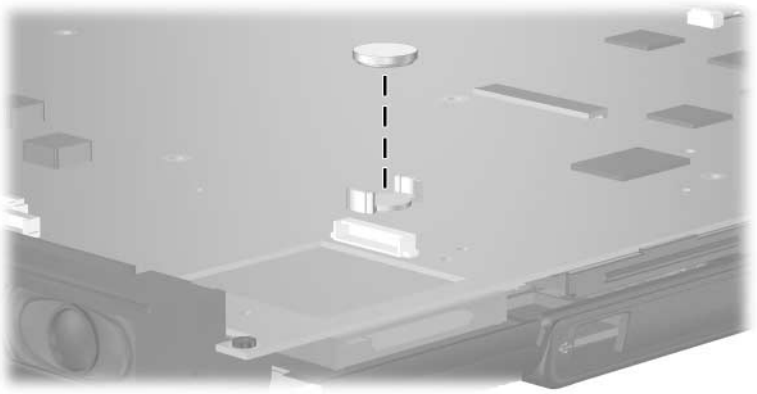

*Removing the System Board Screws and Screw Locks*

9. Position the notebook with the front panel toward you.
10. Lift the front edge of the system board until it clears the base enclosure ❶.
11. Slide the system board forward at an angle and remove it ❷.




*Removing the System Board*

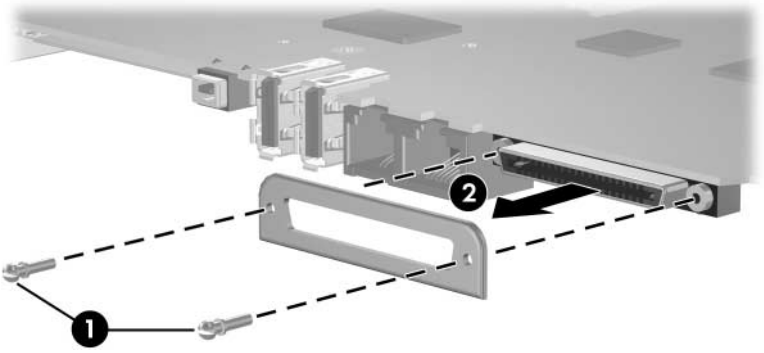
12. Remove the RTC battery from the socket on the system board and install it in the socket on the replacement system board.



*Removing the RTC Battery*

An expansion port bracket and PC Card cage designed specifically for the Compaq Presario X6000 are included with the replacement system board. Follow steps 13 through 20 to remove the expansion port bracket and PC Card cage that are already installed on the replacment system board and replace them with the bracket and cage designed for the Compaq Presario X6000.

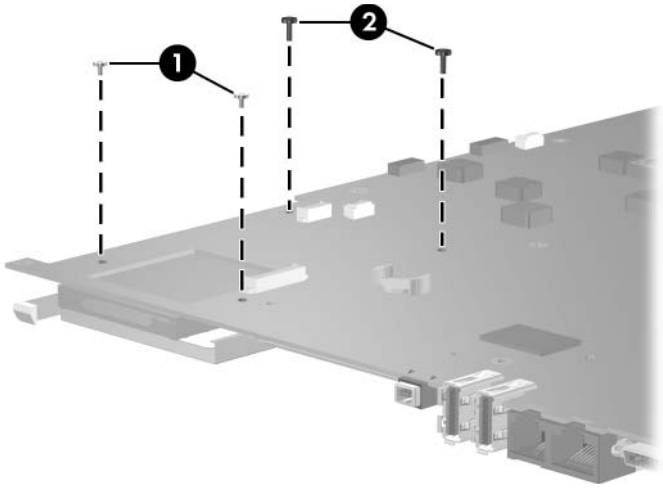
13. Position the system board with the expansion port and PC Card slot toward you.
14. Remove the two SM1.5×9.0 shoulder screws ❶ on each side of the expansion port.
15. Remove the expansion port bracket ❷.




*Removing the Expansion Port Bracket*

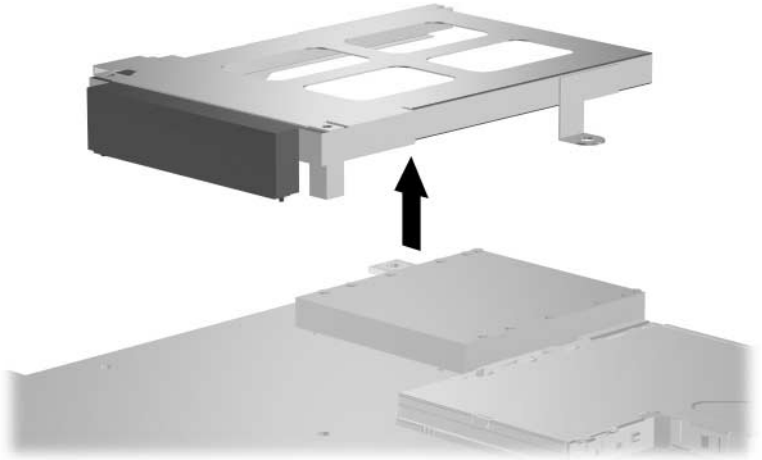
16. Install the replacement expansion port bracket.

17. Remove the two PM1.5×4.0 screws ❶ and the two PM1.5×14.0 screws ❷ that secure the PC Card cage to the system board.




*Removing the PC Card Cage Screws*

18. Turn the system board upside down.
19. Lift the PC Card cage straight up to disconnect it from the system board.



*Removing the PC Card Cage*

20. Install the replacement PC Card cage.

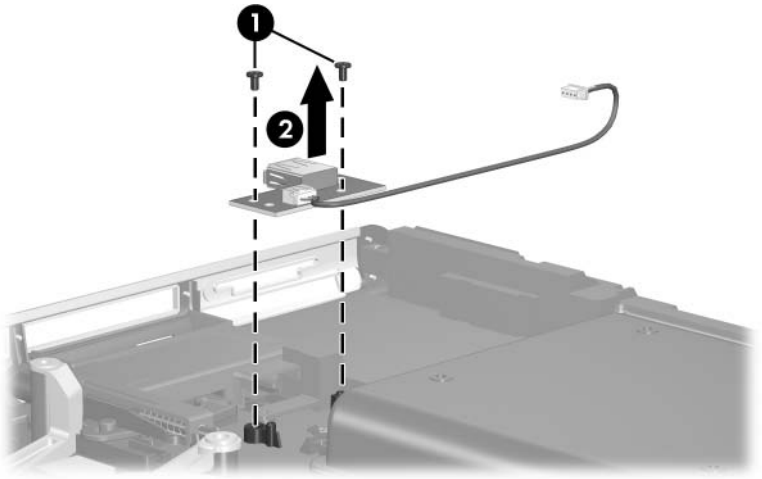
Reverse the above procedures to install the system board.

# 5.17 Digital Drive Board

| Spare Part Number Information | |
|---|---|
| Digital drive board (includes cable) | 374759-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment cover (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. System board (refer to Section 5.16)

2. Remove the two PM2.0×4.0 screws ❶ that secure the digital drive board to the base enclosure.
3. Remove the digital drive board ❷.




*Removing the Digital Drive Board*

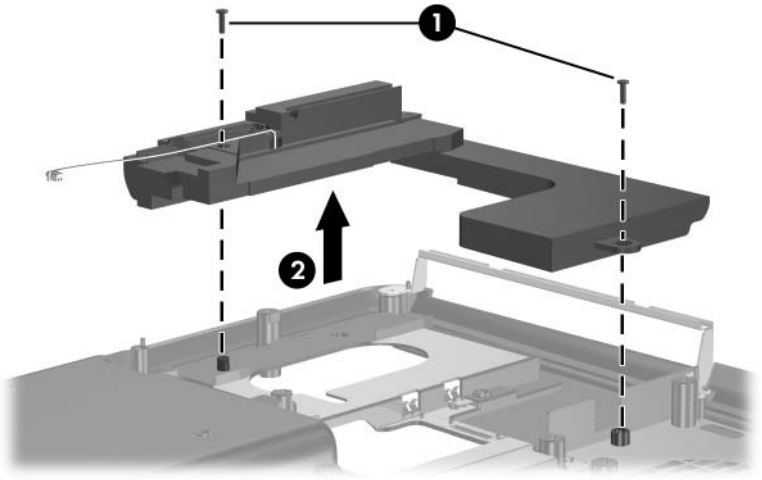
Reverse the above procedure to install the digital drive board.

# 5.18 Speakers

| Spare Part Number Information | |
|---|---|
| Left and right speakers | 378522-001 |

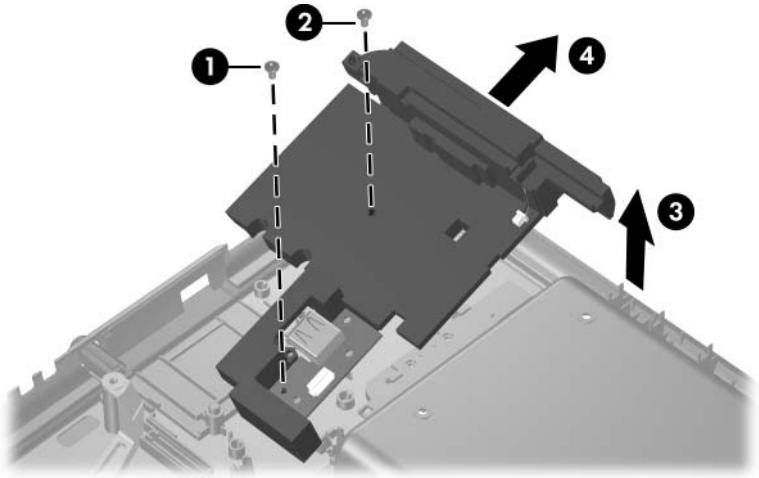
1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   - ❏ Optical drive (refer to Section 5.5)
   - ❏ Memory module compartment cover (refer to Section 5.6)
   - ❏ Mini PCI compartment cover (refer to Section 5.7)
   - ❏ Switch cover (refer to Section 5.8)
   - ❏ Keyboard (refer to Section 5.10)
   - ❏ Display assembly (refer to Section 5.11)
   - ❏ Top cover (refer to Section 5.12)
   - ❏ System board (refer to Section 5.16)
   - ❏ Digital drive board (refer to Section 5.17)
2. Position the notebook with the rear panel toward you.

3. Remove the two PM2.0×4.0 screws ❶ that secure the left speaker to the base enclosure.
4. Remove the left speaker ❸.




*Removing the Left Speaker*

5. Remove the PM1.5×3.5 screw ❶ and PM2.0×4.0 screw ❷ that secure the right speaker to the base enclosure.
6. Lift the right side of the right speaker ❷, then slide the speaker to the right to remove it ❸.




*Removing the Right Speaker*

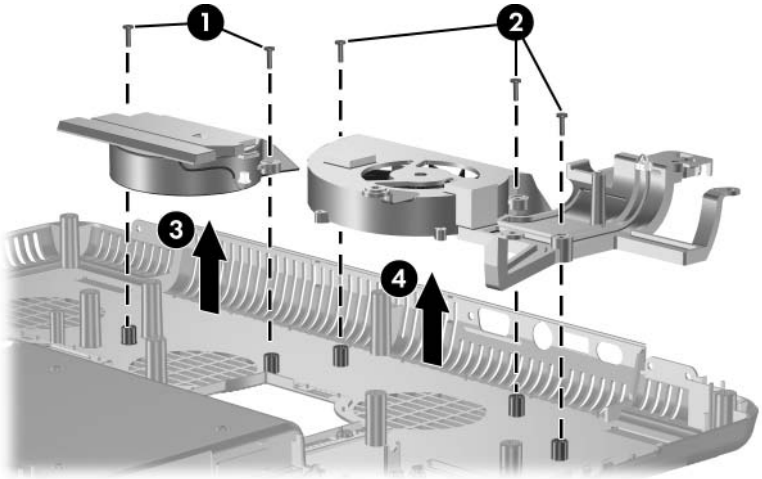
Reverse the above procedure to install the speakers.

# 5.19 Base Enclosure Fans

| Spare Part Number Information | |
|---|---|
| Base enclosure middle fan | 380029-001 |
| Base enclosure right fan | 380028-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment cover (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. System board (refer to Section 5.16)

2. Remove the two PM2.0×8.0 screws ❶ that secure the base enclosure middle fan assembly to the base enclosure.
3. Remove the three PM2.0×8.0 screws ❷ that secure the base enclosure right fan assembly to the base enclosure.
4. Remove the middle ❸ and right fans ❹.




*Removing the Base Enclosure Fans*

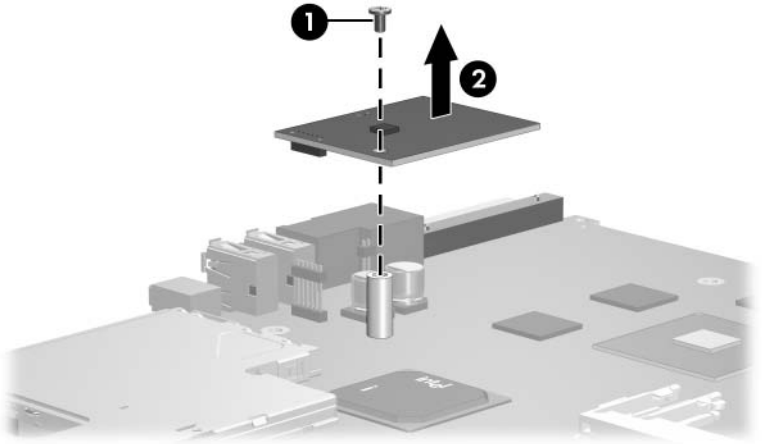
Reverse the above procedure to install the base enclosure fans.

# 5.20 Modem Board

| Spare Part Number Information | |
|---|---|
| Modem board | 374758-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment cover (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. System board (refer to Section 5.16)
2. Turn the system board upside down with the external monitor connector toward you.

3. Remove the PM2.0×3.0 screw ❶ that secures the modem board to the system board.
4. Remove the modem board ❷.




*Removing the Modem Board*

Reverse the above procedure to install the modem board.

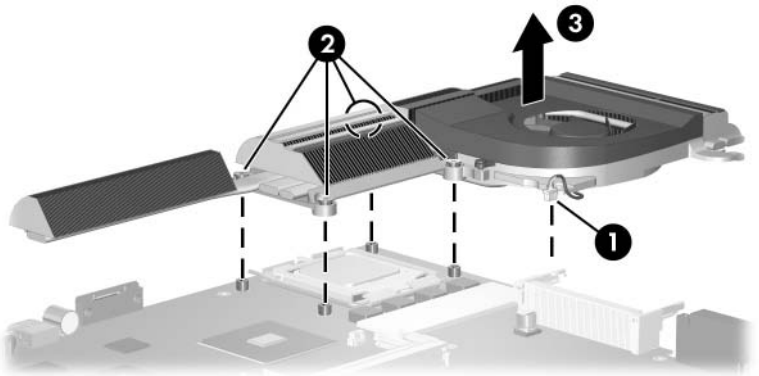
# 5.21 Heat Sink Module

| Spare Part Number Information | |
|---|---|
| Heat sink module (includes fan and thermal paste) | 380031-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment cover (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. System board (refer to Section 5.16)

2. Disconnect the fan cable from the system board ❶.
3. According to the 1, 2, 3, 4 sequence stamped into the heat sink module, loosen the four PM2.0×12.0 spring-loaded shoulder screws ❷ that secure the heat sink module to the system board.
4. Lift the heat sink module and remove it ❸.

Due to the adhesive quality of the thermal paste located between the heat sink module and processor, it may be necessary to move the module from side to side to detach the module from the processor.




*Removing the Heat Sink Module*

Reverse the above procedure to install the heat sink module.

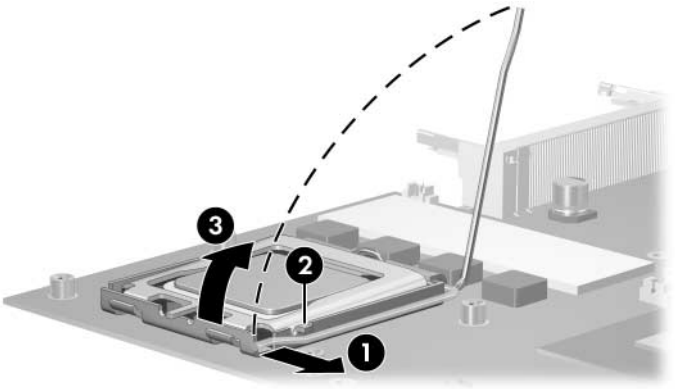
# 5.22 Processor

| Spare Part Number Information | |
|---|---|
| Intel Pentium 4 560 (3.6-GHz) | 377213-001 |
| Intel Pentium 4 550 (3.4-GHz) | 374718-001 |
| Intel Pentium 4 540 (3.2-GHz) | 374717-001 |
| Intel Pentium 4 530 (3.0-GHz) | 374716-001 |
| Intel Pentium 4 520 (2.8-GHz) | 374715-001 |

1. Prepare the notebook for disassembly (refer to Section 5.3) and remove the following components:
   a. Optical drive (refer to Section 5.5)
   b. Memory module compartment cover (refer to Section 5.6)
   c. Mini PCI compartment cover (refer to Section 5.7)
   d. Switch cover (refer to Section 5.8)
   e. Keyboard (refer to Section 5.10)
   f. Display assembly (refer to Section 5.11)
   g. Top cover (refer to Section 5.12)
   h. System board (refer to Section 5.16)
   i. Heat sink module (refer to Section 5.21)

**CAUTION:** The processor release arm is under spring tension. Do not let go of the arm when removing or installing the processor. Failure to follow this caution can result in damage to the processor and system board.

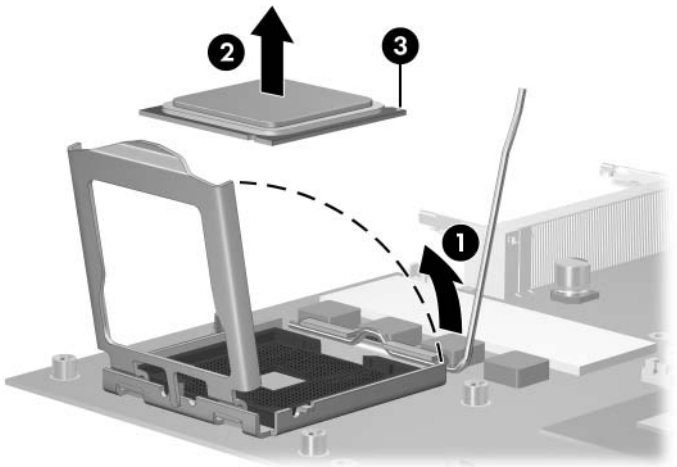
2. Slide the tip of the processor release arm to the right ❶ until it clears the stop on the socket ❷.
3. Manually swing the arm up and back as far as it will freely go ❸.




*Disengaging the Processor Release Arm*

4. Swing the processor socket cover up and forward ❶.
5. Lift the processor straight up to remove it ❷.

The gold triangle ❸ on the processor should be aligned in the front right corner when you install the processor.




*Removing the Processor*

Reverse the above procedure to install theprocessor.

# 6

# Specifications

This chapter provides physical and performance specifications.

**Table 6-1**

**Notebook**

| | | |
|---|---|---|
| **Dimensions** | | |
| Height | | |
| Front | 4.46 cm | 1.76 in |
| Rear | 5.06 cm | 1.99 in |
| Width | 39.80 cm | 15.67 in |
| Depth | 28.29 cm | 11.14 in |
| **Weight** | 4.22 kg | 9.3 lb |
| **Stand-alone power requirements** | | |
| Operating voltage | 19.0 V dc @ 7.1 A/9.5 A – 135 W/180 W | |
| Operating current | 7.1 A/9.5 A | |

## Table 6-1

## Notebook *(Continued)*

| | | |
|---|---|---|
| **Temperature** | | |
| HP Compaq nx9600 Notebook PC | | |
| Operating (not writing to optical disc) | 0°C to 35°C | 32°F to 95°F |
| Operating (writing to optical disc) | 5°C to 35°C | 41°F to 95°F |
| Nonoperating | -20°C to 60°C | -4°F to 140°F |
| Compaq Presario X6000 Notebook PC | | |
| Operating | 10°C to 35°C | 50°F to 95°F |
| Nonoperating | -20°C to 60°C | -4°F to 140°F |
| **Relative humidity** (noncondensing) | | |
| Operating | 10% to 90% | |
| Nonoperating | 5% to 95%, 38.7°C (101.6°F) maximum wet bulb temperature | |
| **Maximum altitude** (unpressurized) | | |
| Operating (14.7 to 10.1 psia) | -15 m to 3,048 m | -50 ft to 10,000 ft |
| Nonoperating (14.7 to 4.4 psia) | -15 m to 12,192 m | -50 ft to 40,000 ft |
| **Shock** | | |
| Operating | 125 g, 2 ms, half-sine | |
| Nonoperating | 200 g, 2 ms, half-sine | |
| **Random Vibration** | | |
| Operating | 0.75 g zero-to-peak, 10 Hz to 500 Hz, 0.25 oct/min sweep rate | |
| Nonoperating | 1.50 g zero-to-peak, 10 Hz to 500 Hz, 0.5 oct/min sweep rate | |

✎ Applicable product safety standards specify thermal limits for plastic surfaces. The notebook operates well within this range of temperatures.

**Table 6-2**

**17.0-inch, WSXGA+WVA Brightview Display**

| | | |
|---|---|---|
| **Dimensions** | | |
| Height | 23.00 cm | 9.06 in |
| Width | 36.80 cm | 14.49 in |
| Diagonal | 43.40 cm | 17.09 in |
| **Number of colors** | Up to 16.8 million | |
| **Contrast ratio** | 200:1 | |
| **Brightness** | 180 nits typical | |
| **Pixel resolution** | | |
| Pitch | 0.197 × 0.197 mm | |
| Format | 1680 × 1050 | |
| Configuration | RGB vertical stripe | |
| **Backlight** | Edge lit | |
| **Character display** | 80 × 25 | |
| **Total power consumption** | 4 W | |
| **Viewing angle** | +/-65° horizontal, +/-50° vertical typical | |

**Table 6-3**

**17.0-inch, WXGA+WVA Brightview Display**

| | | |
|---|---|---|
| **Dimensions** | | |
| Height | 23.00 cm | 9.06 in |
| Width | 36.80 cm | 14.49 in |
| Diagonal | 43.40 cm | 17.09 in |
| **Number of colors** | Up to 16.8 million | |
| **Contrast ratio** | 200:1 | |
| **Brightness** | 180 nits typical | |
| **Pixel resolution** | | |
| Pitch | 0.259 × 0.259 mm | |
| Format | 1280 × 800 | |
| Configuration | RGB vertical stripe | |
| **Backlight** | Edge lit | |
| **Character display** | 80 × 25 | |
| **Total power consumption** | 4 W | |
| **Viewing angle** | +/-40° horizontal, +20/-40° vertical typical | |

**Table 6-4**

**Hard Drives, Part 1**

| | 100-GB* | 100-GB* | 80-GB* | 80-GB* |
|---|---|---|---|---|
| **Dimensions** | | | | |
| Height | 9.5 mm | 9.5 mm | 9.5 mm | 9.5 mm |
| Width | 70 mm | 70 mm | 70 mm | 70 mm |
| Weight | 99 g | 102 g | 99 g | 99 g |
| **Interface type** | ATA-5 | ATA-5 | ATA-5 | ATA-5 |
| **Transfer rate** | | | | |
| Synchronous (maximum) | 100 MB/sec | 100 MB/sec | 100 MB/sec | 100 MB/sec |
| Security | ATA security | ATA security | ATA security | ATA security |
| **Seek times** (typical read, including setting) | | | | |
| Single track | 3 ms | 3 ms | 3 ms | 3 ms |
| Average | 13 ms | 13 ms | 13 ms | 13 ms |
| Maximum | 24 ms | 24 ms | 24 ms | 24 ms |
| **Logical blocks**† | 195,364,233 | 195,364,233 | 156,301,488 | 156,301,488 |
| **Disk rotational speed** | 5400 rpm | 4200 rpm | 5400 rpm | 4200 rpm |
| **Operating temperature** | 5°C to 55°C (41°F to 131°F) | | | |

✎ Certain restrictions and exclusions apply. Consult Customer Care for details.

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less.

†Actual drive specifications may differ slightly.

**Table 6-5**

**Hard Drives, Part 2**

| | 60-GB* | 60-GB* | 40-GB* |
|---|---|---|---|
| **Dimensions** | | | |
| Height | 9.5 mm | 9.5 mm | 9.5 mm |
| Width | 70 mm | 70 mm | 70 mm |
| Weight | 102 g | 99 g | 99 g |
| **Interface type** | ATA-5 | ATA-5 | ATA-5 |
| **Transfer rate** | | | |
| Synchronous (maximum) | 100 MB/sec | 100 MB/sec | 100 MB/sec |
| Security | ATA security | ATA security | ATA security |
| **Seek times** (typical read, including setting) | | | |
| Single track | 3 ms | 3 ms | 3 ms |
| Average | 13 ms | 13 ms | 13 ms |
| Maximum | 24 ms | 24 ms | 24 ms |
| **Logical blocks**† | 117,210,240 | 117,210,240 | 78,140,160 |
| **Disk rotational speed** | 7200 rpm | 4200 rpm | 4200 rpm |
| **Operating temperature** | 5°C to 55°C (41°F to 131°F) | | |

✎ Certain restrictions and exclusions apply. Consult Customer Care for details.

*1 GB = 1 billion bytes when referring to hard drive storage capacity. Actual accessible capacity is less.
†Actual drive specifications may differ slightly.

**Table 6-6**

**Primary 12-cell, Li-Ion Battery Pack**

| | | |
|---|---|---|
| **Dimensions** | | |
| Height | 2.00 cm | 0.79 in |
| Width | 15.80 cm | 6.22 in |
| Depth | 11.90 cm | 4.69 in |
| Weight | 0.34 kg | 0.75 lb |
| **Energy** | | |
| Voltage | 148. V | |
| Amp-hour capacity | 6.6 Ah | |
| Watt-hour capacity | 48 Wh | |
| **Temperature** | | |
| Operating | 5°C to 45°C | 41°F to 113°F |
| Nonoperating | 0°C to 60°C | 32°F to 140°F |

**Table 6-7**

**24X DVD/CD-RW Combo Drive**

| **Applicable disk** | **Read:** | **Write:** |
|---|---|---|
| | DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18),<br>CD-ROM (Mode 1 and 2)<br>CD Digital Audio<br>CD-XA ready (Mode 2, Form 1 and 2)<br>CD-I ready (Mode 2, Form 1 and 2)<br>CD-R, CD-RW<br>Photo CD (single and multisession)<br>CD-Bridge | CD-R and CD-RW |
| **Center hole diameter** | 1.5 cm (0.59 in) | |
| **Disk diameter** | | |
| Standard disc | 12 cm (4.72 in) | |
| Mini disc | 8 cm (3.15 in) | |

**Table 6-7**

**24X DVD/CD-RW Combo Drive *(Continued)***

| | | |
|---|---|---|
| **Disk thickness** | 1.2 mm (0.047 in) | |
| **Track pitch** | 0.74 µm | |
| **Access time** | CD media | DVD media |
| Random | < 110 ms | < 130 ms |
| Full stroke | < 210 ms | < 225 ms |
| **Audio output level** | Line-out, 0.7 V rms | |
| **Cache buffer** | 2 MB | |
| **Data transfer rate** | | |
| CD-R (24X) | 3600 KB/s (150 KB/s at 1X CD rate) | |
| CD-RW (10X) | 1500 KB/s (150 KB/s at 1X CD rate) | |
| CD-ROM (24X) | 3600 KB/s (150 KB/s at 1X CD rate) | |
| DVD (8X) | 10,800 KB/s (1352 KB/s at 1X DVD rate) | |
| Multiword DMA mode 2 | 16.6 MB/s | |
| **Startup time** | < 15 seconds | |
| **Stop time** | < 6 seconds | |

**Table 6-8**

**8X DVD±RW/R and CD-RW Combo Drive**

| **Applicable disk** | **Read:**<br>DVD-R, DVD-RW, DVD-ROM (DVD-5, DVD-9, DVD-10, DVD-18),<br>CD-ROM (Mode 1 and 2)<br>CD Digital Audio<br>CD-XA ready (Mode 2, Form 1 and 2)<br>CD-I ready (Mode 2, Form 1 and 2)<br>CD-R, CD-RW<br>Photo CD (single and multisession)<br>CD-Bridge | **Write:**<br>CD-R and CD-RW<br>DVD-R and DVD-RW |
|---|---|---|
| **Center hole diameter** | 1.5 cm (0.59 in) | |
| **Disk diameter** | | |
| Standard disc | 12 cm (4.72 in) | |
| Mini disc | 8 cm (3.15 in) | |

**Table 6-8**

**8X DVD±RW/R and CD-RW Combo Drive *(Continued)***

| | | |
|---|---|---|
| **Disk thickness** | 1.2 mm (0.047 in) | |
| **Track pitch** | 0.74 µm | |
| **Access time** | CD | DVD |
| Random | < 175 ms | < 230 ms |
| Full stroke | < 285 ms | < 335 ms |
| **Audio output level** | Audio-out, 0.7 Vrms | |
| **Cache buffer** | 2 MB | |
| **Data transfer rate** | | |
| CD-R (16X) | 2,400 KB/s (150 KB/s at 1X CD rate) | |
| CD-RW (8X) | 1,200 KB/s (150 KB/s at 1X CD rate) | |
| CD-ROM (24X) | 3,600 KB/s (150 KB/s at 1X CD rate) | |
| DVD (8X) | 10,800 KB/s (1,352 KB/s at 1X DVD rate) | |
| DVD-R (4X) | 5,400 KB/s (1,352 KB/s at 1X DVD rate) | |
| DVD-RW (2X) | 2,700 KB/s (1,352 KB/s at 1X DVD rate) | |
| Multiword DMA mode 2 | 16.6 MB/s | |
| **Startup time** | < 15 seconds | |
| **Stop time** | < 6 seconds | |

**Table 6-9**

**System DMA**

| Hardware DMA | System Function |
|---|---|
| DMA0 | not applicable |
| DMA1* | not applicable |
| DMA2* | not applicable |
| DMA3 | not applicable |
| DMA4 | Direct memory access controller |
| DMA5* | Available for PC Card |
| DMA6 | Not assigned |
| DMA7 | Not assigned |

*PC Card controller can use DMA 1, 2, or 5.

**Table 6-10**

**System Interrupts**

| Hardware IRQ | System Function |
|---|---|
| IRQ0 | System timer |
| IRQ1 | Standard 101-/102-Key or Microsoft Natural Keyboard |
| IRQ2 | Cascaded |
| IRQ3 | Intel 82801DB/DBM USB2 Enhanced Host Controller—24CD |
| IRQ4 | COM1 |
| IRQ5* | Conexant AC—Link Audio<br>Intel 82801DB/DBM SMBus Controller—24C3<br>Data Fax Modem with SmartCP |
| IRQ6 | Diskette drive |
| IRQ7* | Parallel port |
| IRQ8 | System CMOS/real time clock |
| IRQ9* | Microsoft ACPI-compliant system |
| IRQ10* | Intel USB UHCI controller—24C2<br>Intel 82852/82855 GM/GME Graphic Controller<br>Realtek RTL8139 Family PCI fast Ethernet Controller |

*Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none.

**Table 6-10**

**System Interrupts *(Continued)***

| Hardware IRQ | System Function |
|---|---|
| IRQ11 | Intel USB EHCI controller—24CD<br>Intel USB UHCI controller—24C4<br>Intel USB UHCI controller—24C7<br>Intel Pro/Wireless 2200BG<br>TI OHCI 1394 host controller<br>TI PCI1410 cardbus controller |
| IRQ12 | Synaptics PS/2 touch pad |
| IRQ13 | Numeric data processor |
| IRQ14 | Primary IDE channel |
| IRQ15 | Secondary IDE channel |

PC Cards may assert IRQ3, IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or IRQ15. Either the infrared or the serial port may assert IRQ3 or IRQ4.

## Table 6-11

## System I/O Addresses

| **I/O Address** (hex) | **System Function** (shipping configuration) |
|---|---|
| 000 - 00F | DMA controller no. 1 |
| 010 - 01F | Unused |
| 020 - 021 | Interrupt controller no. 1 |
| 022 - 024 | Opti chipset configuration registers |
| 025 - 03F | Unused |
| 02E - 02F | 87334 “Super I/O” configuration for CPU |
| 040 - 05F | Counter/timer registers |
| 044 - 05F | Unused |
| 060 | Keyboard controller |
| 061 | Port B |
| 062 - 063 | Unused |
| 064 | Keyboard controller |
| 065 - 06F | Unused |
| 070 - 071 | NMI enable/RTC |
| 072 - 07F | Unused |
| 080 - 08F | DMA page registers |
| 090 - 091 | Unused |
| 092 | Port A |
| 093 - 09F | Unused |
| 0A0 - 0A1 | Interrupt controller no. 2 |

**Table 6-11**

**System I/O Addresses *(Continued)***

| **I/O Address** (hex) | **System Function** (shipping configuration) |
|---|---|
| 0A2 - 0BF | Unused |
| 0C0 - 0DF | DMA controller no. 2 |
| 0E0 - 0EF | Unused |
| 0F0 - 0F1 | Coprocessor busy clear/reset |
| 0F2 - 0FF | Unused |
| 100 - 16F | Unused |
| 170 - 177 | Secondary fixed disk controller |
| 178 - 1EF | Unused |
| 1F0 - 1F7 | Primary fixed disk controller |
| 1F8 - 200 | Unused |
| 201 | Joystick (decoded in ESS1688) |
| 202 - 21F | Unused |
| 220 - 22F | Entertainment audio |
| 230 - 26D | Unused |
| 26E - 26 | Unused |
| 278 - 27F | Unused |
| 280 - 2AB | Unused |
| 2A0 - 2A7 | Unused |
| 2A8 - 2E7 | Unused |
| 2E8 - 2EF | Reserved serial port |

**Table 6-11**

**System I/O Addresses *(Continued)***

| **I/O Address** (hex) | **System Function** (shipping configuration) |
|---|---|
| 2F0 - 2F7 | Unused |
| 2F8 - 2FF | Infrared port |
| 300 - 31F | Unused |
| 320 - 36F | Unused |
| 370 - 377 | Secondary diskette drive controller |
| 378 - 37F | Parallel port (LPT1/default) |
| 380 - 387 | Unused |
| 388 - 38B | FM synthesizer—OPL3 |
| 38C - 3AF | Unused |
| 3B0 - 3BB | VGA |
| 3BC - 3BF | Reserved (parallel port/no EPP support) |
| 3C0 - 3DF | VGA |
| 3E0 - 3E1 | PC Card controller in CPU |
| 3E2 - 3E3 | Unused |
| 3E8 - 3EF | Internal modem |
| 3F0 - 3F7 | “A” diskette controller |
| 3F8 - 3FF | Serial port (COM1/default) |
| CF8 - CFB | PCI configuration index register (PCIDIVO-1) |
| CFC - CFF | PCI configuration data register (PCIDIVO-1) |

**Table 6-12**

**System Memory Map**

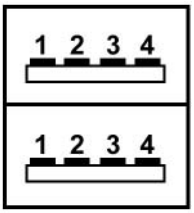
| Size | Memory Address | System Function |
|---|---|---|
| 640 KB | 00000000-0009FFFF | Base memory |
| 128 KB | 000A0000-000BFFFF | Video memory |
| 48 KB | 000C0000-000CBFFF | Video BIOS |
| 160 KB | 000C8000-000E7FFF | Unused |
| 64 KB | 000E8000-000FFFFF | System BIOS |
| 15 MB | 00100000-00FFFFFF | Extended memory |
| 58 MB | 01000000-047FFFFF | Super extended memory |
| 58 MB | 04800000-07FFFFFF | Unused |
| 2 MB | 08000000-080FFFFF | Video memory (direct access) |
| 4 GB | 08200000-FFFEFFFF | Unused |
| 64 KB | FFFF0000-FFFFFFFF | System BIOS |

# A

# Connector Pin Assignments

**Table A-1**

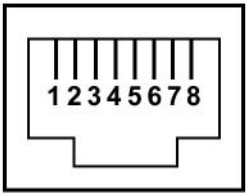
**Universal Serial Bus**




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | +5 VDC | 3 | Data + |
| 2 | Data – | 4 | Ground |

## Table A-2

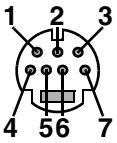
## RJ-45 (Network)




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Transmit + | 5 | Unused |
| 2 | Transmit – | 6 | Receive – |
| 3 | Receive + | 7 | Unused |
| 4 | Unused | 8 | Unused |

## Table A-3

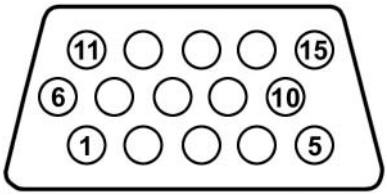
## S-Video-Out




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | S-VHS color (C) signal | 5 | TV-CD |
| 2 | Composite video signal | 6 | S-VHS intensity ground |
| 3 | S-VHS intensity (Y) signal | 7 | Composite video ground |
| 4 | S-VHS color ground | | |

**Table A-4**

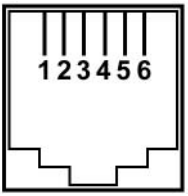
**External Monitor**




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Red analog | 9 | +5 VDC |
| 2 | Green analog | 10 | Ground |
| 3 | Blue analog | 11 | Monitor detect |
| 4 | Not connected | 12 | DDC 2B data |
| 5 | Ground | 13 | Horizontal sync |
| 6 | Ground analog | 14 | Vertical sync |
| 7 | Ground analog | 15 | DDC 2B clock |
| 8 | Ground analog | | |

**Table A-5**

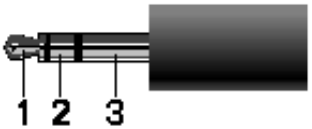
**RJ-11 (Modem)**




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Unused | 4 | Unused |
| 2 | Tip | 5 | Unused |
| 3 | Ring | 6 | Unused |

**Table A-6**

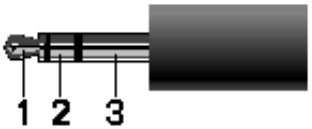
**Audio-In (Microphone)**




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Audio signal in | 3 | Ground |
| 2 | Audio signal in | | |

**Table A-7**

**Audio-Out (Headphone)**




| Pin | Signal | Pin | Signal |
|---|---|---|---|
| 1 | Audio out, left channel | 3 | Ground |
| 2 | Audio out, right channel | | |

# B

# Power Cord Set Requirements

## 3-Conductor Power Cord Set

The wide range input feature of the notebook permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.

The power cord set included with the notebook meets the requirements for use in the country where the equipment is purchased.

Power cord sets for use in other countries must meet the requirements of the country where the notebook is used.

# General Requirements

The requirements listed below are applicable to all countries.

- The length of the power cord set must be at least 1.5 m (5.0 ft) and a maximum of 2.0 m (6.5 ft).
- All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used.
- The power cord sets must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 V AC, as required by each country's power system.
- The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector for mating with the appliance inlet on the back of the notebook.

# Country-Specific Requirements

**3-Conductor Power Cord Set Requirements**

| Country | Accredited Agency | Applicable Note Number |
|---|---|---|
| Australia | EANSW | 1 |
| Austria | OVE | 1 |
| Belgium | CEBC | 1 |
| Canada | CSA | 2 |
| Denmark | DEMKO | 1 |
| Finland | FIMKO | 1 |
| France | UTE | 1 |
| Germany | VDE | 1 |
| Italy | IMQ | 1 |
| Japan | METI | 3 |
| The Netherlands | KEMA | 1 |
| Norway | NEMKO | 1 |
| Sweden | SEMKO | 1 |
| Switzerland | SEV | 1 |

## 3-Conductor Power Cord Set Requirements *(Continued)*

| Country | Accredited Agency | Applicable Note Number |
|---|---|---|
| United Kingdom | BSI | 1 |
| United States | UL | 2 |

1. The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm² conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used.
2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15 A, 125 V) or NEMA 6-15P (15 A, 250 V) configuration.
3. The appliance coupler, flexible cord, and wall plug must bear a “T” mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.00 mm² conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7 A, 125 V) configuration.

# C

# Screw Listing

This appendix provides specification and reference information for the screws used in the notebook. All screws listed in this appendix are available in the Miscellaneous Screw Kit, spare part number 374745-001.

## Table C-1

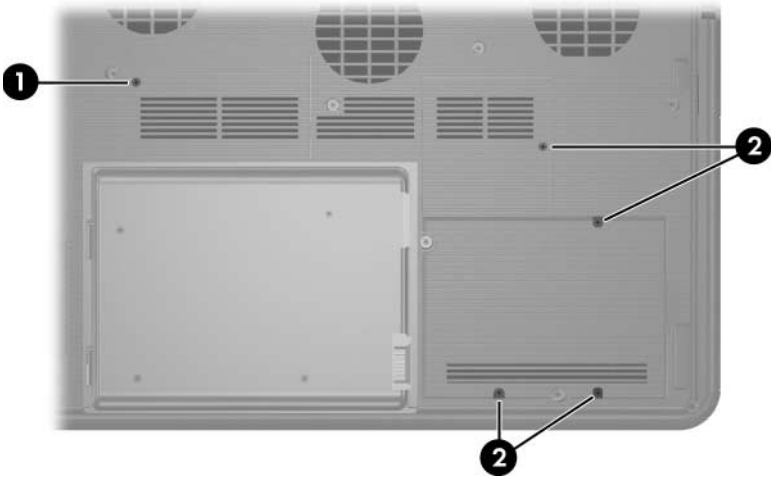
## Phillips PM2.0×5.0 Screw

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 5 | 5.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

❶ One screw that secures the memory module compartment cover to the notebook (screw is captured on the cover by a C clip; documented in Section 5.6)

❷ Four screws that secure the hard drive cover to the notebook (screws are captured on the cover by C clips; documented in Section 5.3)




*Phillips M2.0×5.0 Screw Locations*

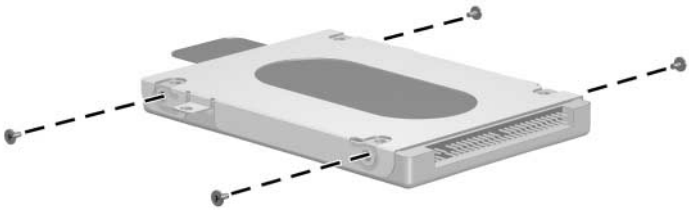
**Table C-2**

**Phillips PM2.5×4.0 Screw**

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 4 | 4.0 mm | 2.5 mm | 4.0 mm |

**Where used:**

Four screws that secure the hard drive frame to the hard drive (documented in Section 5.3)



*Phillips M2.5×4.0 Screw Locations*

## Table C-3

## Phillips PM2.0×8.0 Screw

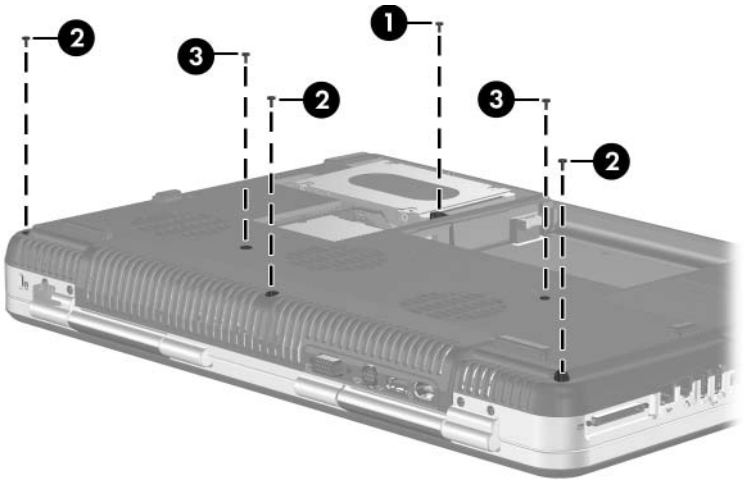
| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

❶ One screw that secures the optical drive to the notebook (documented in Section 5.5)

❷ Three screws that secure the switch cover to the notebook (documented in Section 5.8)

❸ Two screws that secure the keyboard to the notebook (documented in Section 5.10)




*Phillips M2.0×8.0 Screw Location*

**Table C-3**

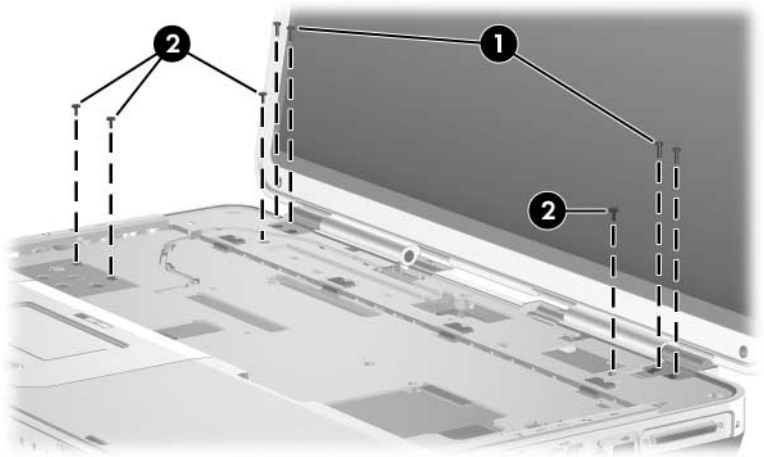
**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

❶ Four screws that secure the display assembly to the notebook (documented in Section 5.11)

❷ Four screws that secure the top cover to the notebook (documented in Section 5.12)



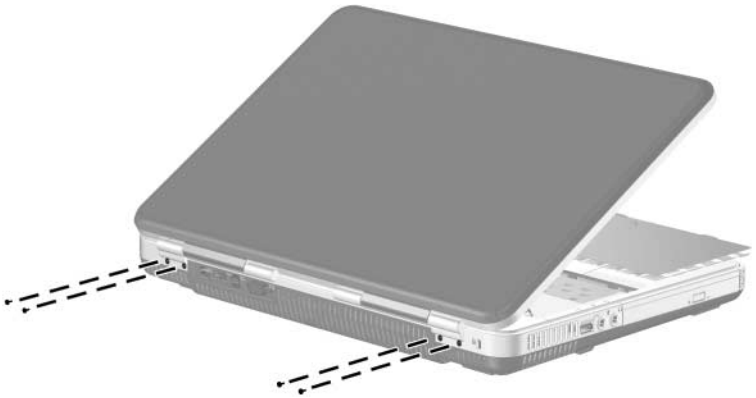

*Phillips M2.0×8.0 Screw Locations*

**Table C-3**

**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used**:
Four screws that secure the display assembly to the notebook (documented in Section 5.11)



*Phillips M2.0×8.0 Screw Locations*

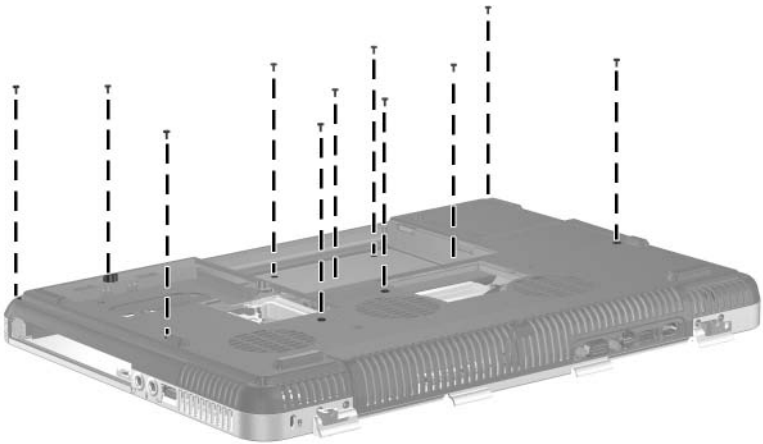
**Table C-3**

**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

Eleven screws that secure the top cover to the notebook (documented in Section 5.12)



*Phillips M2.0×8.0 Screw Locations*

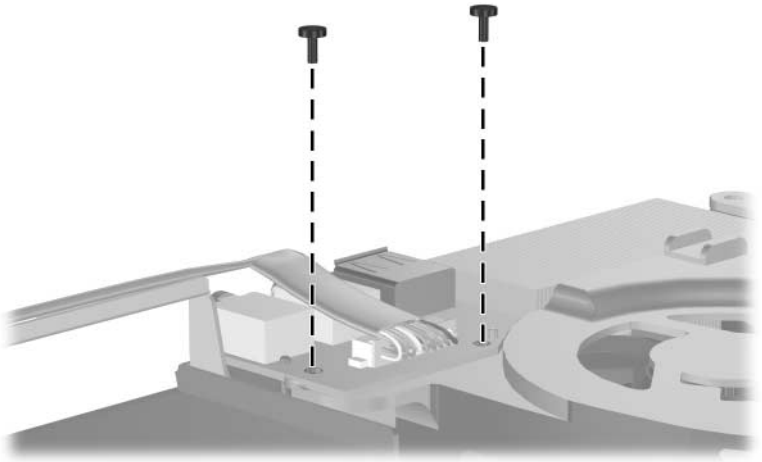
**Table C-3**

**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

Two screws that secure the audio/USB board to the notebook (documented in Section 5.14)



*Phillips M2.0×8.0 Screw Locations*

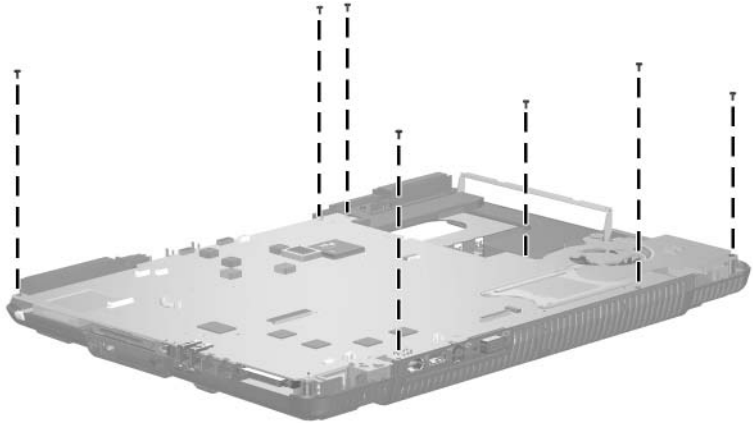
**Table C-3**

**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

Seven screws that secure the system board to the notebook (documented in Section 5.16)



*Phillips M2.0×8.0 Screw Location*

**Table C-3**

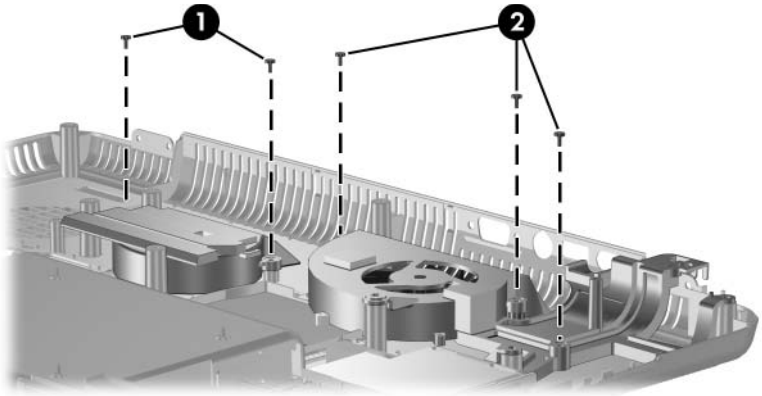
**Phillips PM2.0×8.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 43 | 8.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

❶ Two screws that secure the base enclosure small fan to the notebook (documented in Section 5.19)

❷ Three screws that secure the base enclosure large fan to the notebook (documented in Section 5.19)




*Phillips M2.0×8.0 Screw Locations*

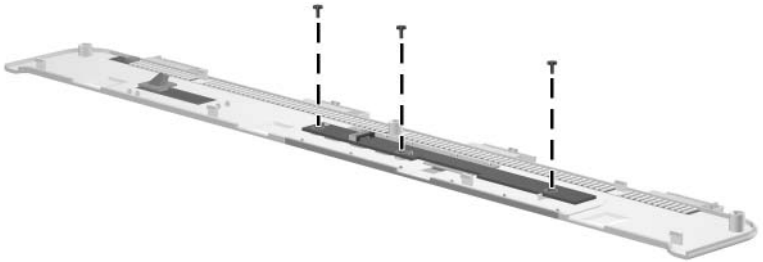
**Table C-4**

**Phillips PM2.0×3.0 Screw**

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 4 | 3.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

Three screws that secure the LED board to the notebook (documented in Section 5.9)



*Phillips M2.0×3.0 Screw Locations*

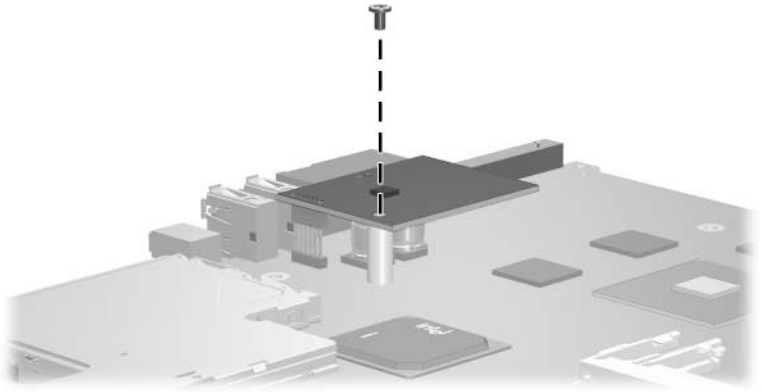
**Table C-4**

**Phillips PM2.0×3.0 Screw *(Continued)***

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 4 | 3.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

One screw that secures the modem board to the notebook (documented in Section 5.20)



*Phillips M2.0×3.0 Screw Locations*

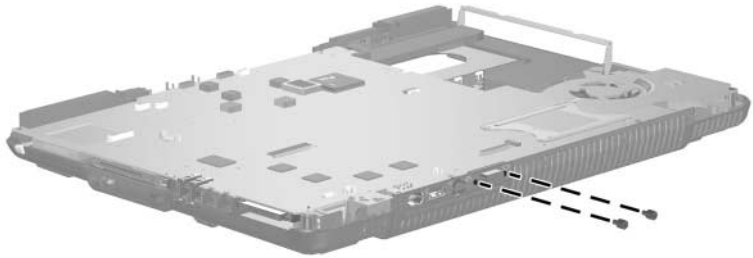
## Table C-5

## Hex Socket HM5.0×9.0 Screw Lock

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 2 | 9.0 mm | 2.5 mm | 5.0 mm |

**Where used:**

Two screw locks that secure the system board to the notebook (documented in Section 5.16)



*Hex Socket HM5.0×9.0 Screw Lock Locations*

## Table C-6

## Phillips PM2.0×4.0 Screw

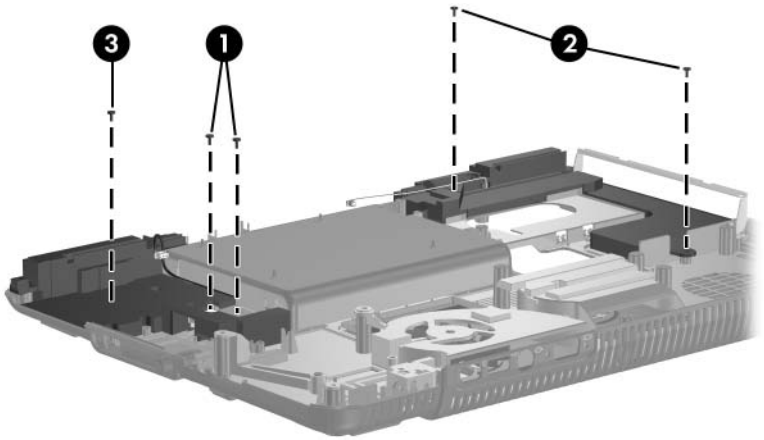
| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 5 | 4.0 mm | 2.0 mm | 4.0 mm |

**Where used:**

❶ Two screws that secure the digital drive board to the notebook (documented in Section 5.17)

❷ Two screws that secure the left speaker to the notebook (documented in Section 5.18)

❸ One screw that secures the right speaker to the notebook (documented in Section 5.18)




*Phillips M2.0×4.0 Screw Locations*

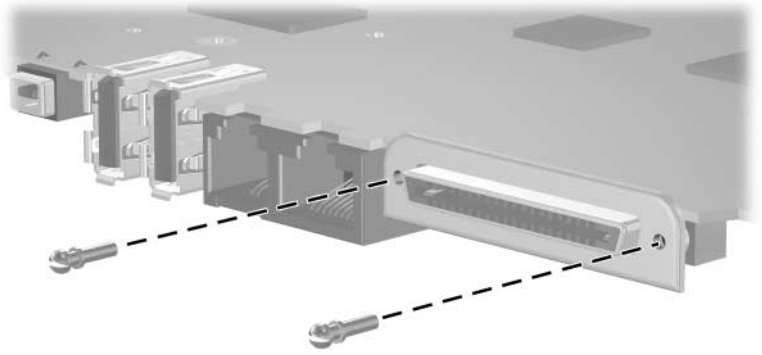
## Table C-7

## Slotted SM1.5×9.0 Shoulder Screw

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 2 | 9.0 mm | 1.5 mm | 2.0 mm |

**Where used:**

Two screws that secure the expansion port bracket to the system board on Compaq Presario X6000 notebooks (documented in Section 5.16)



*Slotted M1.5×9.0 Shoulder Screw Location*

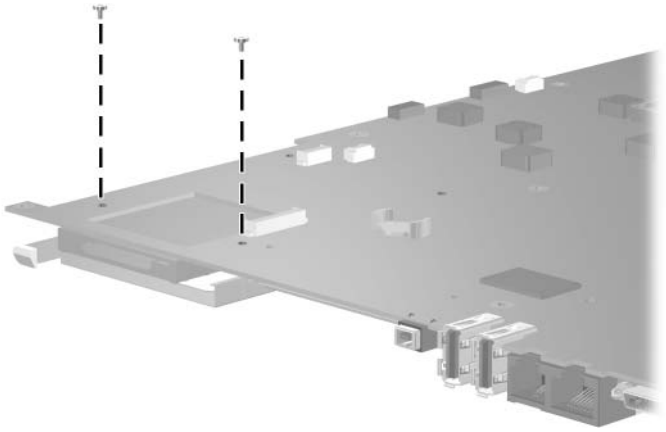
## Table C-8

## Phillips PM1.5×4.0 Screw

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 2 | 4.0 mm | 1.5 mm | 4.0 mm |

**Where used:**

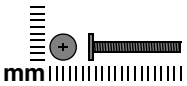
Two screws that secure the PC Card cage to the system board on Compaq Presario X6000 notebooks (documented in Section 5.16)



*Phillips M1.5×4.0 Screw Location*

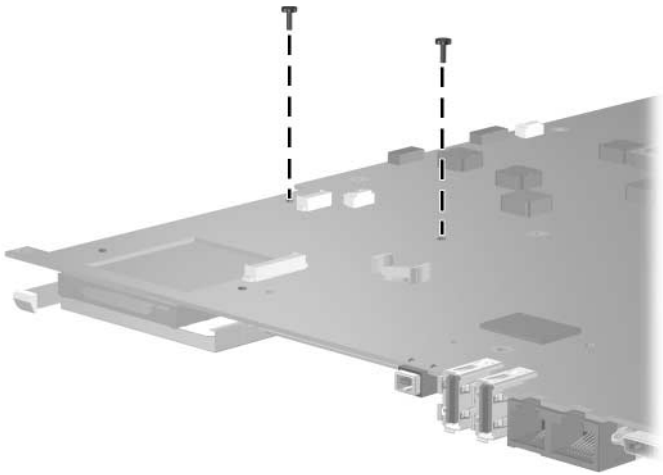
## Table C-9

## Phillips PM1.5×14.0 Screw

|  | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Black | 2 | 14.0 mm | 1.5 mm | 4.0 mm |

**Where used:**

Two screws that secure the PC Card cage to the system board on Compaq Presario X6000 notebooks (documented in Section 5.16)



*Phillips M1.5×14.0 Screw Location*

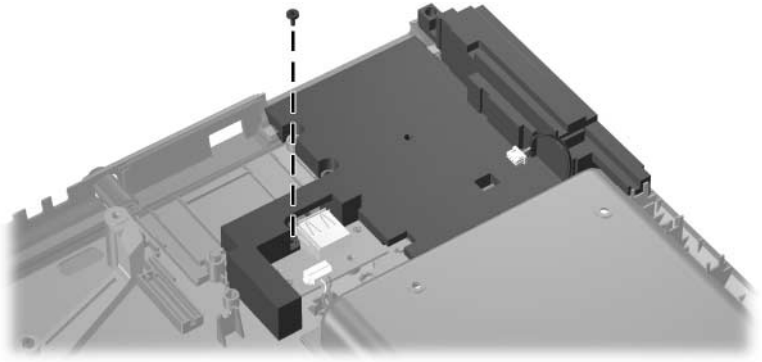
## Table C-10

## Phillips PM1.5×3.5 Screw

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 1 | 3.5 mm | 1.5 mm | 3.5 mm |

**Where used:**

One screw that secures the right speaker to the notebook (documented in Section 5.18)



*Phillips M1.5×3.5 Screw Location*

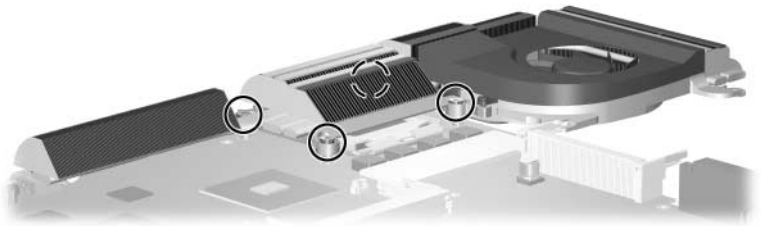
## Table C-11

## Phillips PM2.0×12.0 Spring-Loaded Shoulder Screw

| mm | Color | Qty. | Length | Thread | Head Width |
|---|---|---|---|---|---|
| | Silver | 4 | 12.0 mm | 2.0 mm | 6.0 mm |

**Where used:**

Four screws that secure the heat sink module to the notebook (documented in Section 5.21)



*Phillips M2.0×12.0 Spring-Loaded Shoulder Screw Locations*

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